



FINAL ENVIRONMENTAL IMPACT STATEMENT and Section 4(f)/6(f) Evaluation

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Prepared by:
CarterBurgess

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I-15 Corridor
Montana City to Lincoln Road
Jefferson and Lewis & Clark Counties, Montana

**FINAL ENVIRONMENTAL IMPACT STATEMENT
and Section 4(f)/6(f) Evaluation**

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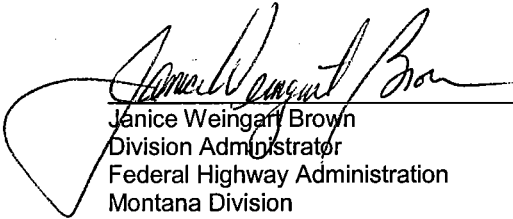
By the
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
and
MONTANA DEPARTMENT OF TRANSPORTATION

Cooperating Agency
U.S. Fish and Wildlife Service



Dave Hill
Bureau Chief
Environmental Bureau
Montana Department of Transportation
2701 Prospect Avenue
Helena, MT 59601

11-4-03
Date



Janice Weingart Brown
Division Administrator
Federal Highway Administration
Montana Division
2880 Skyway Drive
Helena, MT 59602

11-4-03

Date

Abstract

The Montana Department of Transportation (MDT) proposes to provide needed safety and mobility improvements along a 19-kilometer (12-mile) section of Interstate 15 (I-15) between Montana City and Lincoln Road in Jefferson and Lewis & Clark Counties, Montana. This Final Environmental Impact Statement (FEIS) describes the social, economic, and environmental impacts associated with construction and operation of the Preferred Alternative as well as the impacts of the No-Action Alternative and Alternative 2. The Preferred Alternative includes two new I-15 interchanges, improvements to three existing interchanges, and other related improvements to the transportation system. The FEIS also addresses comments received on the Draft EIS (January 2003) and identifies mitigation for unavoidable impacts from the build alternatives.

Comments on this FEIS are due by December 22, 2003 and should be sent to Mr. Mark Studdt, P.E., Project Manager, Montana Department of Transportation, 2701 Prospect Avenue, Helena, MT 59601-9746.

The following persons may be contacted for additional information concerning this document:

Mark Studdt, P.E.
Project Manager
Montana Department of Transportation
2701 Prospect Avenue (59601-9746)
P.O. Box 201001 (59620-1001)
Helena, MT
E-mail: mstuddt@state.mt.us

Dale Paulson
Program Development Engineer
Federal Highway Administration
Montana Division
2880 Skyway Drive
Helena, MT 59602
E-mail: dale.paulson@fhwa.dot.gov

Kim Gambrell, AICP
Consultant Project Manager
Carter & Burgess, Inc.
707 17th Street, Suite 2300
Denver, CO 80202
E-mail: gambrellKM@c-b.com

Viewing Locations

The FEIS is available for agency and public review at the following locations as well as on the project Web site (www.I-15HelenaEIS.com):

Montana Department of Transportation
Environmental Services
2701 Prospect Avenue, Room 111
Helena, MT 59601
(406) 444-0804

Federal Highway Administration
2880 Skyway Drive
Helena, MT 59602
(406) 449-5302

Jefferson County
Clerk & Recorder's Office
Jefferson County Courthouse
Boulder, MT 59632
(406) 225-4020

Lewis & Clark County
City and County Transportation Office
City and County Building, Room 404
316 North Park
Helena, MT 59601
(406) 447-8457

East Helena City Hall
City Clerk's Office
7 E. Main
East Helena, MT 59635
(406) 227-5321

Rossiter Elementary School
1497 E Sierra Road
Helena, MT 59602
(406) 447-8860

Lewis & Clark County Library
120 South Last Chance Gulch
Helena, MT 59601
(406) 447-1690

Boulder Community Library
202 South Main
Boulder, MT 59632
(406) 225-3241

Broadwater Community Library
201 North Spruce
Townsend, MT 59644
(406) 266-5060

Clancy Library
6 North Main
Clancy, MT 59634
(406) 933-5254

Bob's Valley Market
7507 No. Montana Avenue
Helena, MT 59602
(406) 458-5140

Montana City Store
1 Jackson Creek Road
Montana City, MT 59634
(406) 442-6625

Carter & Burgess, Inc.
707 17th Street, Suite 2300
Denver, CO 80202
(303) 820-4894

Technical reports prepared in support of the EIS are available for review by request from MDT Environmental Services (see Volume 2, Appendix D).

Table of Contents (Volume 1)

| | Page No. |
|---|-------------|
| Executive Summary | ES-1 |
| ES 1.0 Introduction | ES-1 |
| ES 2.0 Purpose and Need | ES-1 |
| ES 3.0 Alternatives | ES-2 |
| ES 4.0 Major Environmental Impacts | ES-6 |
| ES 5.0 Section 4(f)/6(f) Evaluation | ES-7 |
| ES 6.0 Mitigation | ES-7 |
| ES 7.0 Other Major Actions..... | ES-7 |
| ES 8.0 Major Unresolved Issues..... | ES-8 |
| Chapter 1.0: Purpose and Need | 1-1 |
| 1.1 Introduction..... | 1-1 |
| 1.2 Project Purpose | 1-3 |
| 1.3 Corridor Background..... | 1-6 |
| 1.4 Relationship to the Planning Process | 1-8 |
| 1.5 Roadway Deficiencies | 1-10 |
| 1.6 Bridge Deficiencies | 1-10 |
| 1.7 Existing and Future Traffic Issues | 1-12 |
| 1.7.1 Interstate Travel..... | 1-12 |
| 1.7.2 Traffic Volumes and Congestion..... | 1-12 |
| 1.7.3 Crashes | 1-12 |
| 1.8 Pedestrian and Bicycle Accommodations | 1-13 |
| 1.9 Future Land Use/Economic Development..... | 1-13 |
| 1.9.1 Land Use Advisory Group Input | 1-13 |
| 1.9.2 Locally Identified Plans for Future Development..... | 1-14 |
| 1.10 Public and Agency Involvement Input | 1-16 |
| 1.11 Conclusion | 1-17 |
| Chapter 2.0: Alternatives | 2-1 |
| 2.1 Introduction..... | 2-1 |
| 2.2 Agency Coordination and Public Involvement Process | 2-3 |
| 2.3 Alternatives Development and Screening Process | 2-5 |
| 2.3.1 Visioning Process..... | 2-5 |
| 2.3.2 Definition of Project Goals..... | 2-7 |
| 2.3.3 Development of Conceptual Screening Evaluation Criteria..... | 2-8 |
| 2.4 Potential Transportation Improvements Considered | 2-9 |
| 2.4.1 Major Options (stand-alone improvements for conceptual screening).... | 2-12 |
| 2.4.2 Supporting Elements | 2-13 |
| 2.4.3 Supporting Elements (supplement to Major Option) | 2-15 |
| 2.4.4 Other Improvements | 2-16 |
| 2.5 Conceptual Screening of Major Options | 2-16 |
| 2.5.1 Major Options Eliminated | 2-19 |

| | |
|---|------------|
| 2.5.2 Options Advanced..... | 2-20 |
| 2.5.3 Description of Interchange Configurations Advanced..... | 2-21 |
| 2.6 Detailed Screening of Options | 2-31 |
| 2.6.1 Options Eliminated | 2-33 |
| 2.6.2 Options Advanced..... | 2-33 |
| 2.7 Detailed Screening of Supporting Elements | 2-35 |
| 2.7.1 Supporting Elements Eliminated | 2-37 |
| 2.7.2 Supporting Elements Advanced..... | 2-39 |
| 2.8 Alternatives Advanced for DEIS Assessment | 2-40 |
| 2.8.1 No-Action Alternative | 2-43 |
| 2.8.2 Alternative 1 | 2-43 |
| 2.8.3 Alternative 2 | 2-51 |
| 2.8.4 Supporting Elements | 2-53 |
| 2.9 Identification of the Preferred Alternative..... | 2-56 |
| 2.10 Conceptual Preliminary Assumptions of Costs | 2-59 |
| 2.11 Potential Funding for I-15 Improvements | 2-60 |
| 2.12 Construction Phasing..... | 2-62 |
| Chapter 3.0: Affected Environment..... | 3-1 |
| 3.1 Introduction..... | 3-1 |
| 3.2 Land Use and Zoning | 3-1 |
| 3.2.1 Current Land Use and Zoning by Jurisdiction | 3-3 |
| 3.2.2 Future Land Use | 3-12 |
| 3.3 Seismic Concerns in the Study Area..... | 3-21 |
| 3.4 Transportation..... | 3-24 |
| 3.4.1 Transportation Plans and Policies..... | 3-24 |
| 3.4.2 Existing Roadway and Traffic Conditions | 3-26 |
| 3.4.3 Existing Public Transit Conditions..... | 3-35 |
| 3.4.4 Existing Private Transit Conditions | 3-38 |
| 3.4.5 Planned and Programmed Transit Improvements | 3-38 |
| 3.4.6 Pedestrian and Bicycle Facilities..... | 3-39 |
| 3.4.7 Railroad Operations | 3-46 |
| 3.4.8 Air Operations | 3-46 |
| 3.5 Farmland | 3-47 |
| 3.5.1 Existing Conditions | 3-47 |
| 3.6 Social Conditions..... | 3-48 |
| 3.6.1 Demographics | 3-50 |
| 3.6.2 Housing | 3-50 |
| 3.6.3 Environmental Justice | 3-52 |
| 3.6.4 Community Facilities/Resources | 3-55 |
| 3.6.5 Public Safety | 3-55 |
| 3.7 Right-of-Way..... | 3-57 |
| 3.8 Economic Conditions | 3-57 |
| 3.8.1 Employment | 3-58 |

| | |
|---|------------|
| 3.9 Air Quality..... | 3-59 |
| 3.9.1 Regulatory Background | 3-59 |
| 3.9.2 Existing Conditions | 3-61 |
| 3.10 Noise..... | 3-62 |
| 3.10.1 Noise Principles..... | 3-62 |
| 3.10.2 Noise Abatement Criteria | 3-62 |
| 3.10.3 Existing Conditions | 3-64 |
| 3.11 Water Resources and Water Quality..... | 3-66 |
| 3.11.1 General Description..... | 3-66 |
| 3.11.2 Impaired Waters and TMDL Regulation | 3-66 |
| 3.11.3 Surface Water..... | 3-68 |
| 3.11.4 Groundwater | 3-71 |
| 3.12 Wetlands | 3-78 |
| 3.12.1 Clean Water Act Section 404 Jurisdiction | 3-79 |
| 3.12.2 Wetland Site Descriptions..... | 3-82 |
| 3.13 Vegetation, Wildlife and Aquatic Resources | 3-84 |
| 3.13.1 Vegetation..... | 3-84 |
| 3.13.2 Noxious Weeds..... | 3-85 |
| 3.13.3 Wildlife | 3-86 |
| 3.13.4 Aquatic Resources..... | 3-87 |
| 3.14 Floodplains | 3-88 |
| 3.14.1 Local Floodplain Regulations | 3-90 |
| 3.15 Wild and Scenic Rivers..... | 3-90 |
| 3.16 Threatened, Endangered and Sensitive Species..... | 3-90 |
| 3.16.1 Threatened or Endangered Species | 3-91 |
| 3.16.2 Sensitive Species | 3-93 |
| 3.17 Cultural Resources | 3-93 |
| 3.18 Hazardous Waste | 3-96 |
| 3.19 Visual Character | 3-99 |
| 3.19.1 Character | 3-101 |
| 3.19.2 Viewsheds | 3-102 |
| 3.20 Parks and Recreation Resources | 3-105 |
| Chapter 4.0: Transportation Impacts | 4-1 |
| 4.1 Introduction..... | 4-1 |
| 4.2 Compatibility with Transportation Plans and Programmed Projects | 4-1 |
| 4.2.1 No-Action Alternative | 4-1 |
| 4.2.2 Preferred Alternative | 4-2 |
| 4.2.3 Alternative 2 | 4-4 |
| 4.3 Roadway Operations and Impacts | 4-4 |
| 4.3.1 Regional/Corridor Traffic Characteristics | 4-4 |
| 4.3.2 I-15 Volumes and Surrounding Roadway System | 4-7 |
| 4.3.3 Interchange Utilization | 4-13 |
| 4.3.4 Vehicle Miles of Travel..... | 4-15 |

| | |
|---|------------|
| 4.3.5 Vehicle Hours of Travel | 4-17 |
| 4.4 Interchange/Intersection Operations | 4-18 |
| 4.4.1 No-Action Alternative | 4-19 |
| 4.4.2 Preferred Alternative | 4-21 |
| 4.4.3 Alternative 2 | 4-25 |
| 4.5 Emergency Response Access | 4-27 |
| 4.5.1 No-Action Alternative | 4-27 |
| 4.5.2 Preferred Alternative | 4-32 |
| 4.5.3 Alternative 2 | 4-32 |
| 4.6 Roadway Connectivity and Access to Community Resources | 4-32 |
| 4.6.1 No-Action Alternative | 4-32 |
| 4.6.2 Preferred Alternative | 4-33 |
| 4.6.3 Alternative 2 | 4-34 |
| 4.7 Traffic Safety | 4-35 |
| 4.7.1 No-Action Alternative | 4-35 |
| 4.7.2 Preferred Alternative | 4-35 |
| 4.7.3 Alternative 2 | 4-36 |
| 4.8 Pedestrian and Bicycle Facilities | 4-36 |
| 4.8.1 No-Action Alternative | 4-36 |
| 4.8.2 Preferred Alternative and Alternative 2 | 4-37 |
| 4.9 Freight/Truck Movement | 4-39 |
| 4.9.1 No-Action Alternative | 4-39 |
| 4.9.2 Preferred Alternative | 4-39 |
| 4.9.3 Alternative 2 | 4-40 |
| 4.10 Transportation Analysis Summary | 4-40 |
| 4.11 Alternative Transportation Solutions | 4-41 |
| 4.11.1 Multi-Modal Applications | 4-41 |
| 4.11.2 Travel Demand Reduction Applications | 4-42 |
| Chapter 5.0: Environmental Consequences and Mitigation | 5-1 |
| 5.1 Introduction | 5-1 |
| 5.1.1 Approach to Indirect Impact Assessment | 5-1 |
| 5.2 No-Action Alternative | 5-2 |
| 5.3 Preferred Alternative | 5-9 |
| 5.3.1 Land Use | 5-9 |
| 5.3.2 Seismic Considerations | 5-12 |
| 5.3.3 Farmland | 5-13 |
| 5.3.4 Social | 5-14 |
| 5.3.5 Environmental Justice | 5-15 |
| 5.3.6 Right-of-Way and Utilities | 5-16 |
| 5.3.7 Economic | 5-18 |
| 5.3.8 Air Quality | 5-20 |
| 5.3.9 Noise | 5-21 |
| 5.3.10 Water Resources and Water Quality | 5-28 |

| | |
|---|------|
| 5.3.11 Wetlands | 5-32 |
| 5.3.12 Vegetation, Wildlife, and Aquatic Resources | 5-36 |
| 5.3.13 Floodplains | 5-41 |
| 5.3.14 Wild & Scenic Rivers | 5-42 |
| 5.3.15 Threatened or Endangered Species | 5-42 |
| 5.3.16 Cultural Resources | 5-44 |
| 5.3.17 Hazardous Waste | 5-46 |
| 5.3.18 Visual | 5-48 |
| 5.3.19 Parks and Recreation | 5-52 |
| 5.3.20 Construction | 5-52 |
| 5.3.21 Permits | 5-58 |
| 5.3.22 Relationship Between Local Short-term Uses of the Environment and the Maintenance and Enhancement of Long-term Productivity | 5-59 |
| 5.3.23 Irreversible and Irretrievable Commitment of Resources | 5-60 |
| 5.4 Alternative 2 | 5-61 |
| 5.4.1 Land Use | 5-61 |
| 5.4.2 Seismic Considerations | 5-62 |
| 5.4.3 Farmland | 5-62 |
| 5.4.4 Social | 5-62 |
| 5.4.5 Environmental Justice | 5-63 |
| 5.4.6 Right-of-Way and Utilities | 5-64 |
| 5.4.7 Economic | 5-65 |
| 5.4.8 Air Quality | 5-65 |
| 5.4.9 Noise | 5-66 |
| 5.4.10 Water Resources and Water Quality | 5-68 |
| 5.4.11 Wetlands | 5-70 |
| 5.4.12 Vegetation, Wildlife, and Aquatic Resources | 5-72 |
| 5.4.13 Floodplains | 5-73 |
| 5.4.14 Wild and Scenic Rivers | 5-74 |
| 5.4.15 Threatened or Endangered Species | 5-74 |
| 5.4.16 Cultural Resources | 5-76 |
| 5.4.17 Hazardous Waste | 5-76 |
| 5.4.18 Visual | 5-77 |
| 5.4.19 Parks and Recreation | 5-77 |
| 5.4.20 Construction | 5-78 |
| 5.4.21 Permits | 5-78 |
| 5.4.22 Relationship Between Local Short-term Uses of the Environment and the Maintenance and Enhancement of Long-term Productivity | 5-79 |
| 5.4.23 Irreversible and Irretrievable Commitment of Resources | 5-79 |
| 5.5 Cumulative Impacts | 5-79 |
| 5.5.1 Reasonably Foreseeable Projects within the Study Area | 5-81 |
| 5.5.2 Historical Setting | 5-86 |
| 5.5.3 Environmental Consequences | 5-87 |

| | |
|--|------------|
| 5.5.4 Summary | 5-93 |
| 5.5.5 Cumulative Impacts Mitigation | 5-94 |
| 5.6 Summary of Impacts..... | 5-97 |
| 5.7 Summary of Mitigation | 5-116 |
| Chapter 6.0: Section 4(f)/6(f) Evaluation | 6-1 |
| 6.1 Introduction..... | 6-1 |
| 6.2 What is Section 4(f)? | 6-1 |
| 6.3 Section 4(f) Properties: Cultural Resources | 6-2 |
| 6.3.1 Proposed Montana City Archaeological District | 6-3 |
| 6.3.2 Prehistoric Lithic Scatter and Tipi Rings | 6-5 |
| 6.3.3 Northern Pacific Railroad | 6-5 |
| 6.3.4 Washburn Farmstead/Eddie Barbeau Home | 6-7 |
| 6.3.5 Silver Creek School/Little Red School House..... | 6-9 |
| 6.3.6 Deal House | 6-9 |
| 6.4 Section 4(f) Resources: Parks and Recreational Resources | 6-11 |
| 6.5 Avoidance Alternatives | 6-14 |
| 6.5.1 Alternatives to Avoid Impacts | 6-14 |
| 6.5.2 Measures to Minimize Harm | 6-15 |
| 6.6 Coordination | 6-15 |
| 6.7 Section 4(f) Determination | 6-16 |
| 6.8 What is Section 6(f) | 6-16 |
| 6.8.1 Section 6(f) Resources | 6-16 |
| 6.8.2 Potential Impacts to 6(f) Properties..... | 6-16 |
| Chapter 7.0: Comments and Coordination | 7-1 |
| 7.1 Introduction..... | 7-1 |
| 7.2 Agency Coordination | 7-1 |
| 7.2.1 Cooperating Agencies | 7-1 |
| 7.2.2 Coordination with Local, State, and Federal Agencies | 7-1 |
| 7.2.3 Interdisciplinary Team | 7-4 |
| 7.3 Public Scoping Process | 7-4 |
| 7.3.1 Notice of Intent | 7-4 |
| 7.3.2 Land Use Advisory Group | 7-5 |
| 7.3.3 Advisory Committee..... | 7-6 |
| 7.3.4 Public Opinion Survey | 7-9 |
| 7.3.5 Public Workshops | 7-11 |
| 7.4 Public Information Program | 7-13 |
| 7.4.1 Local Group and Organization Meetings | 7-13 |
| 7.4.2 Newsletters | 7-13 |
| 7.4.3 Telephone Information Hotline..... | 7-15 |
| 7.4.4 Project Web Site..... | 7-15 |
| 7.4.5 Media Information Program | 7-15 |
| 7.4.6 Environmental Justice (EJ) Outreach..... | 7-17 |
| 7.5 Comments Received | 7-17 |

| | |
|---|------------|
| 7.6 Public Involvement Activities | 7-19 |
| 7.7 Distribution and Review of the DEIS | 7-21 |
| 7.8 Public Comments and Hearing on the DEIS | 7-22 |
| 7.9 Distribution and Review of the FEIS | 7-24 |
| Chapter 8.0: List of Preparers..... | 8-1 |
| Chapter 9.0: List of Recipients | 9-1 |

Index

Appendices (Volume 2)

- Appendix A: DEIS Comments and Responses
- Appendix B: Agency Coordination and Letters
- Appendix C: Public Involvement
- Appendix D: List of Technical Reports

List of Figures

Page No.

| | | |
|-------------|---|------|
| Figure ES-1 | Study Area | 3 |
| Figure 1-1 | Regional Location Map | 1-4 |
| Figure 1-2 | Study Area..... | 1-5 |
| Figure 1-3 | Existing Roadway and Bridge Deficiencies along the I-15 Corridor... | 1-11 |
| Figure 2-1 | Alternatives Screening Process | 2-4 |
| Figure 2-2 | Improvement Options Suggested by the Public..... | 2-10 |
| Figure 2-3 | South Helena Interchange Option | 2-23 |
| Figure 2-4 | Capitol Interchange Improvements Option—Colonial Drive Direct Connection to US 12 | 2-25 |
| Figure 2-5 | Capitol Interchange Improvements Option—Colonial Drive Underpass Connection to US 12..... | 2-26 |
| Figure 2-6 | Capitol Interchange Improvements Option—Diamond Interchange with One-Way Frontage Road | 2-27 |
| Figure 2-7 | Custer Interchange Option—Partial Cloverleaf with A/D Lanes..... | 2-29 |
| Figure 2-8 | Custer-Cedar Interchange Option—Split Diamond | 2-30 |
| Figure 2-9 | Forestvale Interchange Option..... | 2-32 |
| Figure 2-10 | Alternative 1 Proposed Interchange Configurations | 2-41 |
| Figure 2-11 | Alternative 2 Proposed Interchange Configurations | 2-42 |
| Figure 2-12 | Proposed Typical Cross Sections | 2-45 |
| Figure 2-13 | Proposed Typical Cross Sections | 2-46 |
| Figure 2-14 | Capitol Interchange | 2-48 |
| Figure 2-15 | Custer Interchange | 2-49 |
| Figure 2-16 | Montana City Interchange..... | 2-55 |
| Figure 2-17 | Cedar Street Widening | 2-57 |
| Figure 2-18 | Lincoln Road Interchange | 2-58 |
| Figure 3-1* | Zoning/Land Uses within the Study Area..... | 3-2 |
| Figure 3-2 | Helena Valley Planning Area | 3-4 |
| Figure 3-3 | Lewis & Clark County Urban And Transition Areas..... | 3-14 |
| Figure 3-4 | Year 2025 Future Land Use Growth Scenarios..... | 3-17 |
| Figure 3-5 | Year 2025 Future Land Use Growth by Location | 3-18 |
| Figure 3-6 | Interchange Utilization Related to Alternative Land Use Scenarios . | 3-20 |
| Figure 3-7* | Intermountain Seismic Belt..... | 3-21 |
| Figure 3-8* | Helena Valley Geologic Faults and Liquefaction Susceptibility | 3-22 |
| Figure 3-9 | Level of Service at Intersections | 3-27 |
| Figure 3-10 | Level of Service along Roadways | 3-28 |
| Figure 3-11 | 2001 Average Weekday Traffic Volumes..... | 3-29 |
| Figure 3-12 | Forecasted 2025 No-Action Average Weekday Traffic Volumes..... | 3-30 |
| Figure 3-13 | Existing (2001) Levels of Service..... | 3-31 |
| Figure 3-14 | Forecasted 2025 No-Action Levels of Service..... | 3-32 |
| Figure 3-15 | Dial-A-Ride Route | 3-36 |
| Figure 3-16 | Dial-A-Ride Year 2000 Ridership Breakdown | 3-37 |

| | | |
|--------------|--|-------|
| Figure 3-17 | Existing Pedestrian and Bicycle Facilities | 3-42 |
| Figure 3-18 | Proposed Pedestrian and Bicycle Facilities | 3-44 |
| Figure 3-19 | Farmland Soils Within Study Area..... | 3-49 |
| Figure 3-20 | Demographic Study Area | 3-51 |
| Figure 3-21* | Community Facilities | 3-56 |
| Figure 3-22 | Noise Measurement Locations | 3-65 |
| Figure 3-23* | Study Area Water Resources and Floodplains..... | 3-70 |
| Figure 3-24* | Generalized Bedrock Geologic Map | 3-72 |
| Figure 3-25 | General Locations of Delineated Wetlands..... | 3-80 |
| Figure 3-26 | Location of Historical Resources..... | 3-95 |
| Figure 3-27 | Hazardous Waste Sites..... | 3-98 |
| Figure 3-28 | Photo Reference Locations | 3-100 |
| Figure 3-29 | Existing and Proposed Parks | 3-106 |
| Figure 4-1 | Forecasted 2025 No-Action Alternative Average Weekday Traffic Volumes..... | 4-5 |
| Figure 4-2 | Average 2025 Weekday 2-Way Traffic Volumes on I-15 | 4-8 |
| Figure 4-3 | Year 2025 Traffic Forecasts | 4-9 |
| Figure 4-4* | Preferred Alternative Average Weekday Traffic Volume Change from No-Action Alternative to Year 2025 | 4-10 |
| Figure 4-5* | Alternative 2 Average Weekday Traffic Volume Change from No-Action Alternative to Year 2025 | 4-11 |
| Figure 4-6 | I-15 2025 Average Weekday Interchange Utilization | 4-14 |
| Figure 4-7 | I-15 Laneage by Alternative | 4-24 |
| Figure 4-8 | Emergency Response Facilities..... | 4-28 |
| Figure 4-9 | System-Wide Emergency Response Access Analysis (Year 2025) (West Valley Fire Station #1)..... | 4-29 |
| Figure 4-10 | System-Wide Emergency Response Access Analysis (Year 2025) (Helena Fire Station #2) | 4-30 |
| Figure 4-11 | System-Wide Emergency Response Access Analysis (Year 2025) (St. Peter's Hospital) | 4-31 |
| Figure 5-1 | Noise Receptor Locations | 5-26 |
| Figure 6-1 | Section 4(f) Resources..... | 6-4 |
| Figure 6-2 | Proposed Bridge Replacement over Northern Pacific Railroad | 6-6 |
| Figure 6-3 | Washburn Farmstead/Eddie Barbeau Home | 6-8 |
| Figure 6-4 | Deal House | 6-10 |
| Figure 6-5 | Section 4(f) Resources—Existing Parks..... | 6-12 |
| Figure 6-6 | Section 4(f) Resources—Existing Pedestrian and Bicycle Facilities... | 6-13 |
| Figure 7-1 | Location of Key Problems in the I-15 Corridor | 7-10 |

***Note:** Figures marked by an asterisk are color figures and should be reproduced in color for readability.

List of Tables

Page No.

| | | |
|------------|---|------|
| Table 1-1 | Study Area Plans and Policies | 1-9 |
| Table 2-1 | Conceptual Screening of Major Options | 2-17 |
| Table 2-2 | Detailed Screening Evaluation Criteria | 2-31 |
| Table 2-3 | Screening of Supporting Elements..... | 2-35 |
| Table 2-4 | Preliminary Assumptions of Costs | 2-59 |
| Table 2-5 | Preliminary Assumptions of Funding Availability | 2-61 |
| Table 3-1 | Lewis & Clark County Land Ownership | 3-3 |
| Table 3-2 | Lewis & Clark County Special Zoning Districts Adjacent to I-15..... | 3-6 |
| Table 3-3 | Jefferson County Land Use Classifications Adjacent to I-15 | 3-8 |
| Table 3-4 | City Use Districts and Definitions Adjacent to I-15..... | 3-11 |
| Table 3-5 | Population and Employment Forecasts for the Helena Valley | 3-12 |
| Table 3-6 | Rating of I-15 Corridor Study Structures | 3-23 |
| Table 3-7 | Crash Data Summary | 3-34 |
| Table 3-8 | Protected Soils Located Within the Study Area | 3-48 |
| Table 3-9 | Population Statistics..... | 3-50 |
| Table 3-10 | Economic Trends | 3-58 |
| Table 3-11 | Montana Jobs by Industry | 3-59 |
| Table 3-12 | Relationship Between Decibels and Loudness | 3-62 |
| Table 3-13 | Common Outdoor Noise Levels..... | 3-62 |
| Table 3-14 | FHWA Noise Abatement Criteria (NAC) | 3-63 |
| Table 3-15 | Existing Noise Levels..... | 3-64 |
| Table 3-16 | List of Probable Causes and Sources for Listing on the 2002 Montana State 303(d) List | 3-67 |
| Table 3-17 | Well Log Data | 3-75 |
| Table 3-18 | Summary of Wetland Function/Value Ratings and Classifications | 3-79 |
| Table 3-19 | Cultural Resource Sites Adjacent to I-15 | 3-94 |
| Table 4-1 | Vehicle Miles of Travel (VMT) Summary (Year 2025) for the Preferred Alternative..... | 4-16 |
| Table 4-2 | Vehicle Miles of Travel (VMT) Summary (Year 2025) for Alternative 2 | 4-17 |
| Table 4-3 | Vehicle Hours of Travel (VHT) Summaries (Year 2025) for the Preferred Alternative..... | 4-18 |
| Table 4-4 | Vehicle Hours of Travel (VHT) Summaries (Year 2025) for Alternative 2 | 4-18 |
| Table 4-5 | Montana City Interchange LOS with Improvements (Year 2025) | 4-22 |
| Table 4-6 | Lincoln Interchange LOS with Improvements (Year 2025)..... | 4-25 |
| Table 4-7 | Summary of Transportation Consequences | 4-40 |
| Table 5-1 | Existing Noise Levels | 5-22 |
| Table 5-2 | Preferred Alternative Existing and Future Noise Levels at Impacted Receptors (Peak-Hour) | 5-23 |

| | | |
|------------|---|-------|
| Table 5-3 | Direct Wetland Impacts for the Preferred Alternative..... | 5-32 |
| Table 5-4 | Alternative 2 Existing and Future Noise Levels at Impacted Receptors (Peak-Hour) | 5-67 |
| Table 5-5 | Direct Wetland Impacts with Alternative 2 | 5-71 |
| Table 5-6 | Reasonably Foreseeable Development Projects | 5-82 |
| Table 5-7 | Reasonably Foreseeable Transportation Projects | 5-84 |
| Table 5-8 | Reasonably Foreseeable Infrastructure Improvements | 5-86 |
| Table 5-9 | Summary of Impacts Described in the FEIS | 5-97 |
| Table 5-10 | Summary of Mitigation Measures for the Preferred Alternative | 5-116 |
| Table 5-11 | Summary of Mitigation Measures for Alternative 2 | 5-126 |
| Table 6-1 | Summary of Historic and Archaeological Sites | 6-3 |
| Table 7-1 | Agency Coordination | 7-2 |
| Table 7-2 | Land Use Advisory Group Members..... | 7-5 |
| Table 7-3 | Advisory Committee Members | 7-6 |
| Table 7-4 | Summary of Public Comments Received | 7-18 |
| Table 7-5 | Public Involvement Activities | 7-19 |
| Table 8-1 | List of Preparers | 8-1 |

List of Acronyms

| | | | |
|--------|---|-------|--|
| AASHTO | American Association of State Highway and Transportation Officials | LOS | Level of Service |
| AC | Advisory Committee | LUST | Leaking Underground Storage Tank |
| APE | Area of Potential Effect | L&WCF | Land and Water Conservation Fund Program of Assistance to States and Urban Parks |
| ASTM | American Society for Testing and Materials | MCA | Montana Code Annotated |
| BNSF | Burlington Northern-Santa Fe Railroad | MDMB | Monitoring & Data Management Bureau (Montana) |
| CDP | Census Designated Place | MDT | Montana Department of Transportation |
| CERCLA | Comprehensive Environmental Response, Compensation, and Liability Act | MFWP | Montana Fish, Wildlife & Parks |
| CO | carbon monoxide | MNHP | Montana Natural Heritage Program |
| DEIS | Draft Environmental Impact Statement | MPDES | Montana Pollutant Discharge Elimination System |
| DEQ | Department of Environmental Quality (Montana) | MRIS | Montana Rivers Information System |
| EIS | Environmental Impact Statement | MRL | Montana Rail Link |
| EPA | Environmental Protection Agency | MRPNS | Montana Rural Passenger Needs Study |
| ESA | Endangered Species Act | MVM | million vehicle miles |
| FEIS | Final Environmental Impact Statement | NAAQS | National Ambient Air Quality Standards |
| FEMA | Federal Emergency Management Agency | NAC | Noise Abatement Criteria |
| FHWA | Federal Highway Administration | NEPA | National Environmental Policy Act |
| FIRM | Flood Insurance Rate Maps | NHS | National Highway System |
| GPM | gallons per minute | NOI | Notice of Intent |
| GCA | Groundwater Closure Area | NPDES | National Pollutant Discharge Elimination System |
| HALOS | Helena Area Linked Open Space | NRCS | Natural Resource Conservation Service |
| HAZUS | Hazards US | NRDC | Natural Resources Defense Council |
| HC | hydrocarbons | NRHP | National Register of Historic Places |
| HCM | Highway Capacity Manual | RCRA | Resource Conservation and Recovery Act |
| HRA | Helena Regional Airport | ROD | Record of Decision |
| HVID | Helena Valley Irrigation District | | |
| HVPA | Helena Valley planning area | | |
| I-15 | Interstate 15 | | |

List of Acronyms (cont'd.)

| | |
|-------|---|
| RP | Reference Post |
| SHPO | State Historic Preservation Office |
| SMCL | secondary maximum contaminant level |
| STIP | Statewide Transportation Improvement Program |
| TDM | Transportation Demand Management |
| TMA | Transportation Management Association |
| TEA21 | Transportation Equity Act for the 21st Century |
| TMDL | Total Maximum Daily Load |
| TSP | Total Suspended Particulate |
| TSM | Transportation System Management |
| UBC | Uniform Building Code |
| USACE | U.S. Army Corps of Engineers |
| USDA | U.S. Department of Agriculture |
| USFWS | U.S. Fish & Wildlife Service |
| UST | Underground Storage Tank |
| VHT | vehicle hours of travel |
| VMT | vehicle miles of travel |

EXECUTIVE SUMMARY

ES 1.0 Introduction

The Federal Highway Administration (FHWA), in cooperation with the Montana Department of Transportation (MDT), is considering improvements to a 19-kilometer (12-mile) stretch of Interstate Highway 15 (I-15) in Jefferson and Lewis & Clark Counties, Montana. The improvements under consideration range from the provision of additional pedestrian and bicycle facilities to the construction of new interchanges along the interstate.

The Environmental Impact Statement (EIS) process is used to objectively evaluate federally funded transportation improvements and fully disclose the potential positive and negative environmental consequences of those improvements. This Final EIS (FEIS) discusses the process followed to identify a Preferred Alternative for the corridor and compares the potential social, economic and environmental impacts of the Preferred Alternative (Alternative 1) and Alternative 2 to the No-Action Alternative.

This Executive Summary highlights the major findings of this FEIS related to the first six chapters of the document:

1. Purpose and Need
2. Alternatives
3. Affected Environment
4. Transportation Impacts
5. Environmental Consequences and Mitigation
6. Section 4(f) /6(f) Evaluation

This Executive Summary also discusses other major actions in the study area and any unresolved issues affecting the I-15 Corridor or the EIS process.

ES 2.0 Purpose and Need

The purpose and need for the project is to improve east-west travel for all modes of travel, improve emergency service access, improve pedestrian and bicycle facilities, improve safety and operational efficiency of I-15, interchanges and roadways crossing I-15. The purpose of the I-15 Corridor (Montana City to Lincoln Road) EIS is to identify and evaluate potential transportation improvements that will accommodate anticipated traffic volumes safely and efficiently, while also facilitating the movement of east-west traffic crossing the interstate. The EIS addresses safety and

operating efficiencies at the existing I-15 interchanges and east-west roadways crossing I-15 and also the need for additional interchanges and crossings. The roadways crossing I-15 are studied to the extent necessary to ensure their ability to collect and distribute anticipated traffic to, from and across I-15. **Figure ES-1** shows the study area.

Increases in population and changes in land use patterns in the Helena Valley have resulted in increased traffic volumes on I-15, on the on- and off-ramps and interchanges serving I-15, and on east-west roadways crossing over or under the interstate highway. This increased traffic has decreased the operating efficiency of the interstate highway and the interchanges and the east-west roadways that serve and cross I-15. Another result of the increased traffic is a 31% higher than average crash rate along the I-15 Corridor. I-15 also has become a barrier to east-west travel, limiting the mobility of cars, trucks, busses, pedestrians, bicyclists, and emergency response vehicles.

The purpose of this document is to provide the general public and project decision-makers with all the relevant information related to the impacts of the transportation improvements under study. This document is circulated for review to interested parties, including state and federal agencies, citizens, and elected officials. After fully considering comments received on the DEIS through the public and agency review process, Alternative 1 has been identified as the Preferred Alternative in this FEIS. A Record of Decision (ROD) will then be prepared by the FHWA documenting the final agency decision, associated impacts and required mitigation.

ES 3.0 Alternatives

The alternatives presented in this FEIS are the result of an extensive public and agency coordination process combined with a thorough environmental and engineering analysis. More than 30 discrete transportation improvement options were identified in the DEIS as opportunities to provide needed benefits within the study area. These options for improving the transportation system were systematically refined, combined, and compared. Following the public review period and careful consideration of impacts identified in the DEIS for each alternative, Alternative 1 has been identified as the Preferred Alternative. Alternative 1 best meets the project purpose and need and has the least environmental impacts of the build alternatives evaluated in the DEIS.

Preferred Alternative (Alternative 1)

The Preferred Alternative is a composite of transportation improvements including a new South Helena interchange and a new northern interchange at Custer Avenue. This alternative is designed to optimize corridor transportation improvements without incurring undesirable environmental impacts.

This alternative is enhanced by including five supporting elements to complete the proposed improvements. The major components of the alternative are:

- ▶ New interchange at South Helena (approximately 2.7 kilometers (1.6 miles) south of the Capitol interchange)
- ▶ Interchange improvements at Capitol
- ▶ New interchange at Custer Avenue
 - ◇ Conceptual design for widening of Custer Avenue between N. Montana Avenue and N. Washington Street includes a maximum width of four 3.6-meter (12-foot) through lanes with a 3.6-meter to 7.3-meter (12-foot to 24-foot) median/turn lanes plus the pedestrian/bicycle envelopes as described in Section 4.8.2. Final design will determine the exact configuration.
 - ◇ Construction of two auxiliary lanes (each direction) on I-15 between Custer Avenue and the Capitol interchange plus appropriate transitions for adding and dropping the auxiliary lanes (to be determined in final design).
 - ◇ Minor realignment of east side Frontage Road at Custer Avenue.
 - ◇ Replacement of the twin I-15 bridges over the Montana Rail Link railroad.
- ▶ Supporting elements:
 - ◇ Montana City interchange improvements
 - ◇ Connect west side Frontage Road between Montana City and Colonial Drive
 - ◇ Broadway underpass for pedestrian and bicycle use
 - ◇ Widen Cedar Street to five 3.6-meter (12-foot) lanes from I-15 to N. Montana Avenue
 - ◇ Lincoln Road interchange improvements

Alternative 2 is a composite of transportation improvements including a new south Helena interchange and a new northern interchange at Forestvale Road. This alternative is also designed to optimize corridor transportation improvements without incurring undesirable environmental impacts.

Alternative 2 differs from Alternative 1 in two important engineering details. The first difference is the location of the new northern interchange at Forestvale Road, rather than at Custer Avenue. Custer Avenue widening is not required with Alternative 2 since there is not a Custer interchange proposed, and therefore is not included. The second is in the number and length of the auxiliary lanes required to support each build alternative. This alternative is enhanced by including five supporting elements to complete the proposed improvements under Alternative 2. The major components of Alternative 2 are:

- ▶ New interchange at South Helena (approximately 2.7 kilometers (1.6 miles) south of the Capitol interchange)
- ▶ Interchange improvements at Capitol
- ▶ New interchange at Forestvale Road
 - ◇ Construction of an auxiliary lane (each direction) on I-15 between Forestvale Road and the Capitol interchange plus a second auxiliary lane in each direction between Cedar and Capitol interchange ramps with appropriate transitions for adding and dropping auxiliary lanes (to be determined in final design). The existing Custer Avenue bridge could be maintained if the auxiliary lane is constructed to the inside of I-15.
 - ◇ Minor realignment of east side Frontage Road
 - ◇ Slight realignment and widening of Forestvale Road between N. Montana Avenue and the east side Frontage Road
 - ◇ Replacement of the twin I-15 bridges over the Montana Rail Link railroad due to the required auxiliary lanes
- ▶ Supporting elements (described in Section 2.8.4):
 - ◇ Lincoln Road interchange improvements
 - ◇ Montana City interchange improvements
 - ◇ Connect west side Frontage Road between Montana City and Colonial Drive
 - ◇ Widen Cedar Street to five 3.6-meter (12-foot) lanes from I-15 to N. Montana Avenue
 - ◇ Broadway underpass for pedestrian and bicycle use

For a complete description of the No-Action Alternative and Alternative 2 see Section 2.8.1 and Section 2.8.3, and Section 2.8.4 for supporting elements, respectively.

Depending on the cost and availability of resources to implement a recommended build alternative, there may be a need to prioritize improvements within the corridor. Phasing of improvements is dependent upon many factors including funding availability, actual development, and traffic operations. Prior to any phasing decisions MDT will evaluate the temporary traffic operation impacts in relation to level of service (LOS) criteria and the purpose and need identified in the FEIS.

ES 4.0 Major Environmental Impacts

The existing social, economic, and environmental conditions within the study area are described in Chapter 3.0 of this FEIS. Chapters 4.0 and 5.0 present a thorough discussion of potential consequences, both adverse and beneficial, that could reasonably be expected to result from the alternatives being considered. Chapter 5.0 also discusses mitigation measures that MDT will commit to in order to offset impacts that could occur with a build alternative.

Alternative 1 has been identified as the Preferred Alternative. The major environmental impacts discussed in this document are:

- ▶ Construction of the Preferred Alternative or Alternative 2 would directly impact farmlands of prime, statewide and/or local importance. Sixteen hectares (40 acres) would be converted to non-agricultural use.
- ▶ The Preferred Alternative would result in an overall decrease in vehicle miles of travel (VMT) of 0.2 % and a 1.9% decrease in vehicle hours of travel (VHT) when compared to the No-Action Alternative. Comparatively, Alternative 2 was found to reduce VMT by 0.1% and 1.6% decrease of VHT.
- ▶ The Preferred Alternative would directly impact 0.50 hectare (1.24 acres) of Class III and IV non-jurisdictional wetlands. No U.S. Army Corps of Engineers jurisdictional wetlands are anticipated to be impacted. Alternative 2 would directly impact 2.1 hectares (5.5 acres) of non-jurisdictional Class II, III and IV wetlands.
- ▶ The Preferred Alternative would result in increased transportation-related noise levels at 16 receptors. Alternative 2 would result in impacts at 19 receptors.
- ▶ The Preferred Alternative may require acquisition of private property for right-of-way purposes from approximately 80 parcels. Alternative 2 may require acquisition from approximately 60 parcels. During final design, every effort will be made to avoid impacts to private property. No business or residential acquisitions or relocations are anticipated.
- ▶ Construction of the Preferred Alternative or Alternative 2 would increase the amount of impervious surface area by approximately 14 hectares (35 acres).
- ▶ The Preferred Alternative has the potential to impact nine hazardous waste sites. Alternative 2 has the potential to impact eight hazardous waste sites.
- ▶ The Preferred Alternative would result in improved safety, mobility, and access throughout the I-15 Corridor.

More detail on the impacts and mitigation associated with the No-Action Alternative and the two build alternatives are described in Chapters 4.0 and 5.0 and summarized in Sections 5.6 and 5.7.

ES 5.0 Section 4(f)/6(f) Evaluation

Fifty-five prehistoric and historic sites were identified and evaluated within the study area. Of these, six were located within the Area of Potential Effect that were either listed on or eligible for listing on the National Register of Historic Places (NRHP). Each of these resources was evaluated for potential direct, indirect, or constructive use impacts under Section 4(f) of the Department of Transportation Act of 1966, as amended. Project impacts to one property, the Northern Pacific Railroad, were determined to require evaluation under Section 4(f). Placement of new bridge piers within the boundaries of the historic railway property would be required with either of the two build alternatives. Evaluation of these impacts and opportunities for avoidance and minimization are discussed in Chapter 6.0.

Thirteen existing and four proposed parks were identified and evaluated within the study area. Each of these resources was evaluated for potential direct, indirect, or constructive use impacts. No impacts to these parks or to existing recreational trails were identified that would require evaluation under Section 4(f).

No impacts were identified to public recreational lands in the study area that would require evaluation under Section 6(f) of the Land and Water Conservation Fund Act of 1965.

ES 6.0 Mitigation

Impacts associated with the build alternatives have been described along with mitigation commitments for direct impacts to be implemented as part of the project. General mitigation measures are described in this FEIS for direct, indirect, and cumulative impacts. Section 5.6 summarizes the impacts associated with the No-Action Alternative, the Preferred Alternative, and Alternative 2. Section 5.7 summarizes the mitigation for the Preferred Alternative, and Section 5.8 summarizes mitigation for Alternative 2, where different from the Preferred Alternative.

ES 7.0 Other Major Actions

There are several major projects underway or proposed at this time within the I-15 Corridor study area. These projects are shown in **Table 5-6**, **Table 5-7** and **Table 5-8**. Minor transportation improvement actions are described and included within the description of the No-Action Alternative in Chapter 2.0

ES 8.0 Major Unresolved Issues

There are no major unresolved issues that have been identified during the development of this FEIS.

CHAPTER 1.0: PURPOSE AND NEED

1.1 Introduction

The Montana Department of Transportation (MDT) proposes to provide needed safety and mobility improvements along a 19-kilometer (12-mile) section of Interstate 15 (I-15) between Montana City and Lincoln Road in Jefferson and Lewis & Clark Counties, Montana. The Draft Environmental Impact Statement (DEIS) (January 2003) provided a detailed evaluation of proposed improvements, including an examination of the purpose and need for the project, alternatives under consideration, the affected environment, environmental consequences, impacts to Section 4(f) properties, and potential mitigation measures. The EIS was circulated for review by the general public and federal, state and local agencies interested in the project. A 45-day comment period ended on April 7, 2003.

This document is the Final Environmental Impact Statement (FEIS). It describes and evaluates alternatives developed to address existing and projected deficiencies in the study area. The alternatives evaluated include two build alternatives and the No-Action Alternative. Alternative 1 in the DEIS has been identified as the Preferred Alternative in the FEIS and is a composite of transportation improvements that includes:

- ▶ New interchange at South Helena (approximately 2.7 kilometers (1.6 miles) south of the Capitol interchange)
- ▶ Interchange improvements at Capitol
- ▶ New interchange at Custer Avenue
 - ◇ Conceptual design for widening of Custer Avenue between N. Montana Avenue and N. Washington Street includes a maximum width of four 3.6-meter (12-foot) through lanes with a 3.6-meter to 7.3-meter (12-foot to 24-foot) median/turn lanes plus the pedestrian/bicycle envelopes as described in Section 4.8.2. Final design will determine the exact configuration.
 - ◇ Construction of two auxiliary lanes (each direction) on I-15 between Custer Avenue and the Capitol interchange plus appropriate transitions for adding and dropping the auxiliary lanes (to be determined in final design).
 - ◇ Minor realignment of east side Frontage Road at Custer Avenue
 - ◇ Replacement of the twin I-15 bridges over the Montana Rail Link railroad due to the required auxiliary lanes
- ▶ Supporting elements (described in Section 2.8.4):
 - ◇ Montana City interchange improvements

- ◇ Connect west side Frontage Road between Montana City and Colonial Drive
- ◇ Broadway underpass for pedestrian and bicycle use
- ◇ Widen Cedar Street to five 3.6-meter (12-foot) lanes from I-15 to N. Montana Avenue
- ◇ Lincoln Road interchange improvements

Alternative 2 is a composite of transportation improvements that includes:

- ▶ New interchange at South Helena (approximately 2.7 kilometers (1.6 miles) south of the Capitol interchange)
- ▶ Interchange improvements at Capitol
- ▶ New interchange at Forestvale Road
 - ◇ Construction of an auxiliary lane (each direction) on I-15 between Forestvale Road and the Capitol interchange plus a second auxiliary lane in each direction between Cedar and Capitol interchange ramps with appropriate transitions for adding and dropping auxiliary lanes (to be determined in final design). The existing Custer Avenue bridge could be maintained if the auxiliary lane is constructed to the inside.
 - ◇ Minor realignment of east side Frontage Road
 - ◇ Slight realignment and widening of Forestvale Road between N. Montana Avenue and the east side Frontage Road
 - ◇ Replacement of the twin I-15 bridges over the Montana Rail Link railroad due to the required auxiliary lanes
- ▶ Supporting elements (described in Section 2.8.4):
 - ◇ Lincoln Road interchange improvements
 - ◇ Montana City interchange improvements
 - ◇ Connect west side Frontage Road between Montana City and Colonial Drive
 - ◇ Widen Cedar Street to five lanes from I-15 to N. Montana Avenue
 - ◇ Broadway underpass for pedestrian and bicycle use

The No-Action Alternative consists of the existing transportation system and any transportation, development and infrastructure improvements that are already in progress, or are programmed by MDT, Lewis & Clark County, Jefferson County, or the city of Helena (see **Table 5-7**).

All three alternatives are fully described in Chapter 2.0 of this FEIS.

To ensure a complete and objective evaluation of corridor issues and alternative solutions, this Environmental Impact Statement (EIS) is being prepared pursuant to the National Environmental Policy Act (NEPA), the Montana Environmental Policy Act (MEPA), and all relevant implementing regulations.

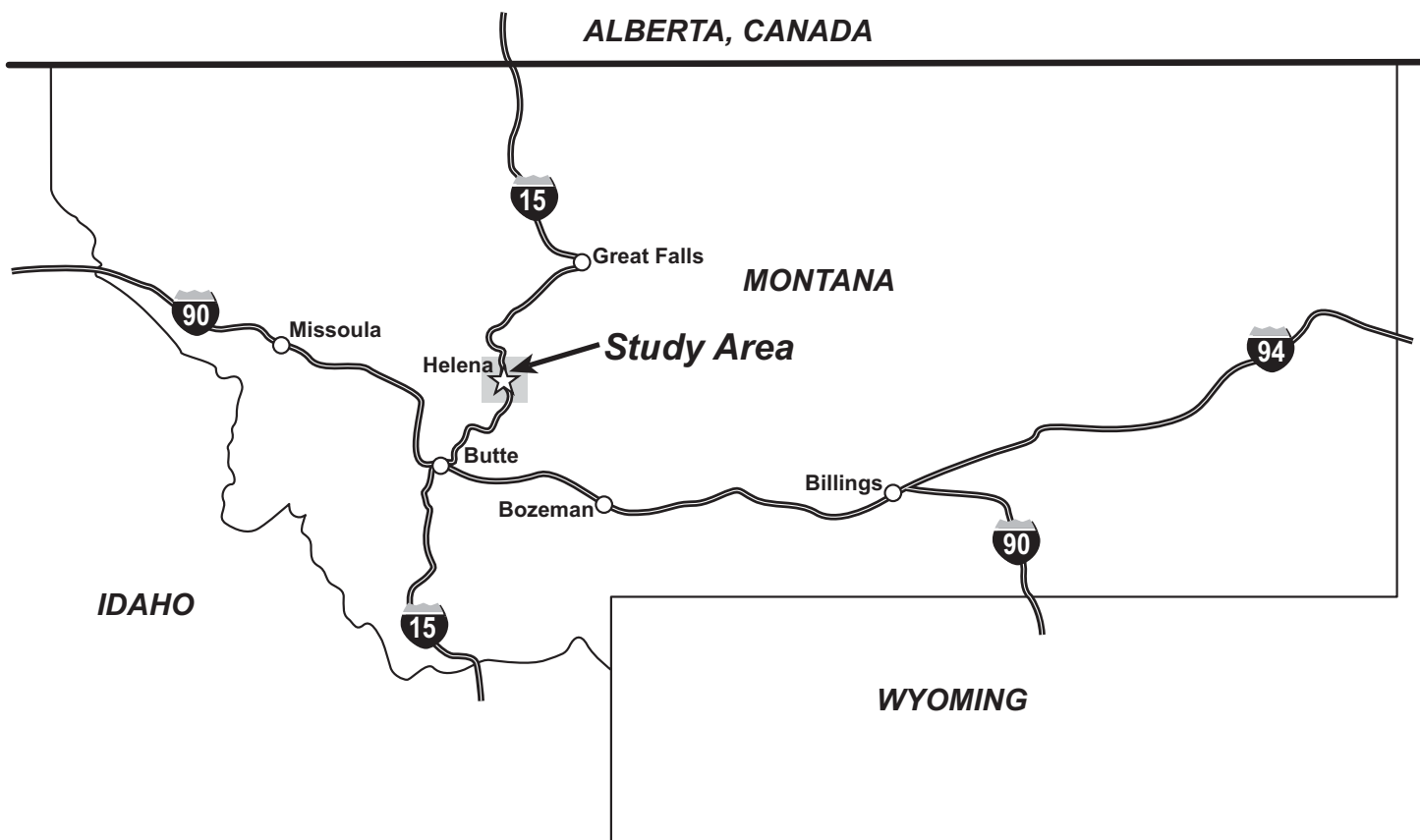
1.2 Project Purpose

Increases in population and changes in land use patterns in the Helena Valley have resulted in increased traffic volumes on I-15, on the on- and off-ramps and interchanges serving I-15, and on east-west roadways crossing over or under the interstate highway. This increased traffic has decreased the operating efficiency of the interstate highway and the interchanges and the east-west roadways which serve and cross I-15. Another result of the increased traffic is a 31% higher than average crash rate along the I-15 Corridor. Most of the accidents are concentrated near the existing interchanges where faster moving through traffic conflicts with entering and exiting vehicles. I-15 also has become a barrier to east-west travel, limiting the mobility of cars, trucks, busses, pedestrians, bicyclists, and emergency response vehicles.

The purpose and need for the project is to address the above needs by improving east-west travel for all modes of travel, improve emergency service access, improve pedestrian and bicycle facilities, improve safety and operational efficiency of I-15, interchanges and roadways crossing I-15. The purpose of this I-15 Corridor EIS is to identify and evaluate potential transportation improvements that will accommodate anticipated traffic volumes safely and efficiently, while also facilitating the movement of east-west traffic crossing the interstate. The EIS addresses safety and operating efficiencies at the existing I-15 interchanges and east-west roadways crossing I-15 and studies the need for additional interchanges and crossings. The roadways crossing I-15 were studied to the extent necessary to ensure their ability to collect and distribute anticipated traffic to, from and across I-15.

The project study area extends approximately 19 kilometers (12 miles) in length from Montana City on the south to Lincoln Road on the north and includes four existing interchanges, four overpasses and thirteen bridge structures. **Figure 1-1** shows the regional location and **Figure 1-2** illustrates the study area.

This FEIS describes the impacts of alternative transportation actions within this study area and compares them to a No-Action Alternative. Environmental resources that are addressed in the FEIS include noise, wetlands, land use, socio-economic, hazardous materials, water quality, farmland, air quality, cultural resources, and biological resources.



1.3 Corridor Background

Work on the Interstate Highway System, both in Montana and across the Nation, began in earnest in the early 1960s. By 1970, the *Helena Urban Transportation Study*¹ already anticipated the need for more access to the new Interstate 15 “superhighway.” While the plan concluded that new interchanges were not needed immediately, it called for revisiting the issue in the future.

In 1980 the Montana Department of Transportation (MDT) completed a comprehensive study of the I-15 Corridor between the Montana City and Lincoln Road interchanges. The study concluded “a package of improvements including an interchange north of Custer Avenue, an interchange at Custer Avenue, and an interchange south of US 12 would provide the optimum transportation benefits to the Helena community.”²

A year later, a new interchange in the North Helena Valley was identified in the *Helena Transportation Plan—1981 Update* as one of the city’s top seven major transportation system needs.

By the mid-’80s, completion of the interstate system in Montana was becoming a reality. MDT sent out requests to Montana’s major communities to identify additional access needs along the Interstate Highway System. Elected officials from the city of Helena and Lewis & Clark County nominated a new interchange at Sierra Road as their top priority. Conceptual environmental and engineering work on the new interchange began in 1987, but studies identified several problems with constructing an interchange at the Sierra Road location. Problems included the close proximity of Rossiter Elementary School and the Little Red School House, which was classified as an historic site on the National Register of Historic Places.

In August 1992 an EIS was completed³ which identified construction of a new interchange at Forestvale Road, just south of Sierra Road, as the Preferred Alternative. Work on the design for the new interchange began later that same year. By early 1996 final planning and design activities were underway to support construction of the Forestvale interchange beginning in 1997. However, additional traffic engineering studies that were completed during this same time period raised questions about the overall effectiveness of the new interchange in improving traffic congestion in the North Valley, particularly along N. Montana Avenue and at the Capitol interchange.

Partly in response to these traffic questions, a series of discussions took place in 1996 and 1997 among MDT staff, the Transportation Coordinating Committee, and city and county commissioners regarding various transportation improvement measures,

¹ Montana Department of Highways Planning and Research Bureau, 1970.

² Henningson, Durham & Richardson, Inc. *A Study of the I-15 Corridor in the Vicinity of Helena, Montana, September 1980.*

³ Record of Decision for Interstate 15 North Helena Valley Interchange, Lewis & Clark County, Montana, August 1992.

including the Forestvale interchange. Several public meetings also were held to ask for input from local citizens. As a result of these discussions, a local decision was made to move forward with a package of other transportation improvements that was based largely on priorities identified in the *Helena Transportation Plan* instead of pursuing the Forestvale interchange.

The issue was ultimately brought before the Montana Transportation Commission in December 1997. Following a presentation and discussion, the Commission voted to proceed with the Forestvale interchange, the Preferred Alternative in the 1992 EIS, rather than replacing the project with alternative improvements. Right-of-way acquisition and completion of design plans for the Forestvale interchange continued following the Transportation Commission's vote.

Early in 1999 a lawsuit challenged the use of the 1992 EIS as the basis for decision-making on the Forestvale project. The District Court for the First Judicial District in Lewis & Clark County heard this case. The District Court ruled in favor of MDT and allowed the project to proceed to construction. The project was let to contract in April 1999 resulting in an appeal of the original lawsuit. This action led to a hearing before the Montana Supreme Court which overturned the District Court ruling in January 2000. The Montana Supreme Court decision resulted in the project being enjoined and the withdrawal of the contract for construction of the Forestvale interchange (*Montana Environmental Information Center, Inc, et al. v. Montana Department of Transportation, et al.*, 298 Mont.1 (2000)).

Under the Montana Environmental Policy Act (Title 75, Chapter 1, MCA), additional environmental studies must be done if significant new information or circumstances are identified that could change the basis for selecting the Preferred Alternative. In this case, the Montana Supreme Court ruled that there were new issues that needed to be looked at before construction could begin. These issues included:

1. Questions raised by the public, local officials and Department of Transportation staff about the overall effectiveness of the Forestvale interchange in improving traffic problems in the North Valley. Reducing congestion in the North Valley, particularly on N. Montana Avenue, was one of the main reasons for choosing to build a new interchange at Forestvale.
2. Extensive public consideration of a package of other transportation projects that might serve the community better than the Forestvale interchange. Strong but divided public opinion about these alternative projects suggested to the Supreme Court that new information about the transportation needs along the I-15 Corridor was available and should be studied before construction on a new interchange could begin.
3. Changed patterns of land use development and traffic in the North Valley since the EIS was completed in 1992. These changes could possibly affect the basis for

deciding to build a new interchange at Forestvale and should be studied before a final decision was made.

As a result of the Montana Supreme Court decision, MDT and FHWA decided to initiate a new EIS for the I-15 Corridor to address all reasonable alternatives, including the Forestvale interchange, for solving present day and future (year 2025) transportation problems along the I-15 Corridor between the Montana City and Lincoln Road interchanges.

1.4 Relationship to the Planning Process

Improvements within 0.8 km (0.5 mile) of the I-15 Corridor included in the *2003 to 2005 Statewide Transportation Improvement Program (STIP)* that are planned, in progress, or recently completed include:

- ▶ Resurfacing of I-15 between Jefferson City and Helena.
- ▶ Pavement seal and cover on MTS 282 from Montana City south.
- ▶ Intersection improvements to Montana City/MTS 282.
- ▶ Custer reconstruction from N. Washington Street east to York Road.
- ▶ Signal upgrade throughout Helena.
- ▶ N. Montana Avenue widening and turn lanes.
- ▶ N. Montana Avenue/MTS 229 overlay, seal, and cover (RP 4.79).
- ▶ Pedestrian/Bicycle Trail- Montana City.
- ▶ Pedestrian tunnel at I-15.
- ▶ Ramp revisions at Capitol/I-15 interchange.
- ▶ Lincoln Road interchange reconstruction.
- ▶ Mill and overlay the plant mix shoulders and median on 5.63 kilometers (3.5 miles) of US 12 between Helena and East Helena (RP 46.6).
- ▶ Bridge reconstruction at Tenmile Creek—2 kilometers (1.2 miles) west of Helena at Williams Street.
- ▶ N. Montana Avenue Intersection Spot Safety Improvements—Helena.

The MDT Tentative Construction Plan describes five construction projects within the I-15 Corridor in the 2002 to 2006 timeframe. These include two overlay projects, reconstruction of segments of Custer Avenue, widening and adding turn lanes on N. Montana Avenue and intersection improvements in Montana City.

Improvements that are included in the 1993 Update to the *Helena Area Transportation Plan* (by the city of Helena) are new interchanges at Forestvale and Custer, widening of N. Montana Avenue from Lyndale to Custer (completed), widening of portions of Cedar Street and Custer Avenue, widening of the Cedar Street bridge over I-15 (completed in 2002) and a new Broadway underpass.

A number of additional plans and policies were reviewed for their compatibility with the alternatives described in Chapter 2.0 of this FEIS. These are shown in **Table 1-1**.

Table 1-1
Study Area Plans and Policies

| Name of Plan | Compatible with Alternatives Assessed? |
|---|--|
| <i>Lewis & Clark County Comprehensive Draft Plan (2000)</i> | Yes. Alternatives correspond with the identified Urban and Transition growth areas. |
| <i>Lewis & Clark County Special Zoning District Guidelines (1988)</i> | Yes. Areas adjacent to I-15 are zoned for residential and commercial land use. |
| <i>City of Helena/Lewis & Clark County Comprehensive Parks, Recreation and Open Space Plan (1998)</i> | Yes. Proposed trails correspond to pedestrian and bicycle improvements associated with the alternatives. |
| <i>Helena Area Transportation Plan (1993) (currently being updated)</i> | Yes. Issues identified in the Plan are part of the purpose and need for this project. Proposed improvements are compatible. |
| <i>Helena Area Wastewater Treatment Facility Plan (Final-1998)</i> | Yes. Upgrades and new facilities accommodate anticipated growth through 2020. Includes areas identified for growth by the city and county. |
| <i>City of Helena Growth Policy (2001)</i> | Yes. Growth areas identified are similar to Lewis & Clark County. |
| <i>Zoning Map for the City of Helena (2001)</i> | Yes. |
| <i>Jefferson County Comprehensive Plan (1993) (currently being updated)</i> | Yes. Growth is identified to occur along I-15. |
| <i>Amended North Jefferson County Zoning Regulations, Map, and Written Description (1997)</i> | Yes. Majority of land uses adjacent to I-15 are for commercial and residential development. |
| <i>City of Helena Water Master Plan Update (1997)</i> | Yes. Upgrades and new facilities accommodate anticipated growth in areas identified by city and county. |
| <i>Infrastructure in Helena's Developing Eastside: Present and Future (2000)</i> | Yes. This area has been identified as a growth area in the city and county plans. |
| <i>The Greater Helena Area 2001 Transportation Development Plan Update (2001)</i> | Not applicable since this plan focuses on improvements to Helena's Dial-A-Ride bus service. |
| <i>Draft Non-Motorized Transportation Plan (March 2003)</i> | Yes. Proposed improvements are compatible. |

1.5 Roadway Deficiencies

A number of the interchanges within the I-15 Corridor have either inadequate acceleration and/or deceleration lanes, sight distance, ramp design speeds, shoulder width or ramp terminal radii. In addition, future traffic volumes on I-15 through much of the central portion of the study area will exceed the statewide capacity standard for interstate highways. **Figure 1-3** illustrates various roadway and bridge deficiencies that currently exist along I-15. By interchange, noted roadway deficiencies include:

Montana City

Inadequate capacity for future traffic volumes

Capitol Area

Poor pedestrian and bicycle accommodations

Heavy congestion

Mainline weave for loop ramps

Substandard deceleration lanes

Substandard design speed on loop ramps

Inadequate capacity for existing and future traffic volumes

Lincoln Road

Interchange designed for low-volume traffic

Poor sight distance

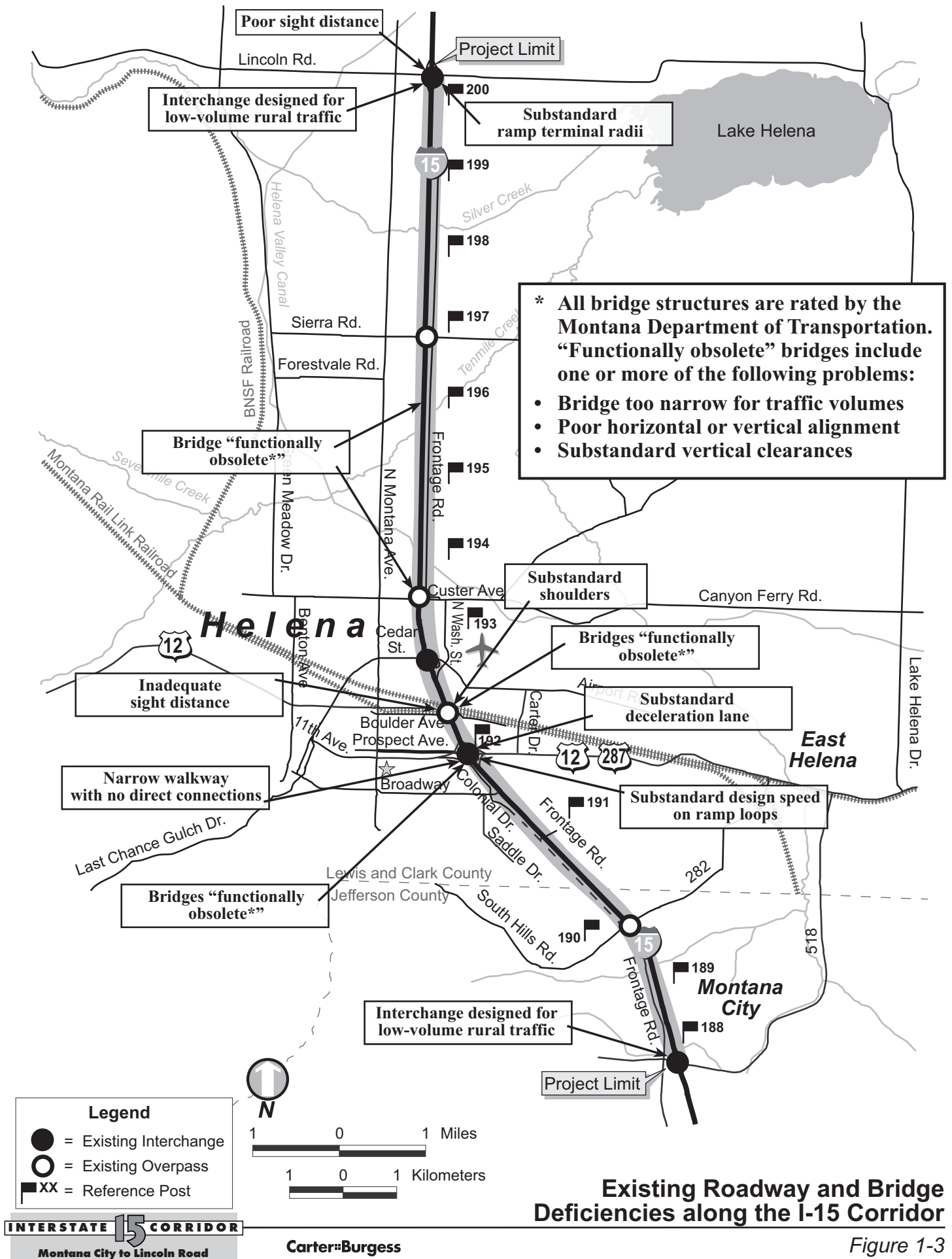
Substandard ramp terminal radii

Lack of adequate shoulder width on-ramps

Age of structure

1.6 Bridge Deficiencies

The study area includes 13 bridges at nine locations. Five of the structures are considered functionally obsolete according to the Federal Highway Administration's "Recording and Coding Guide for the Structure Inventory and Appraisal of the Nation's Bridges". These bridges are structurally adequate to carry today's loads but are narrow considering the amount of traffic that they carry. The structure at Custer Avenue, the dual structures at the Capitol interchange and the dual structures at the Montana Rail Link crossing fall into this category. Additionally, at the dual structures at the Capitol interchange and the Montana Rail Link, the approach roadway tapers into a narrower bridge, creating a potential safety problem.



1.7 Existing and Future Traffic Issues

1.7.1 Interstate Travel

I-15 serves a critical role as a regional and national interstate facility. It is the major north-south corridor in the State of Montana for interstate and international commerce. I-15 also provides a direct connection between the cities of Butte, Helena and Great Falls and links the northern cities with Interstate 90, at Butte. I-15 is also a vital link in the international CANAMEX Trade Corridor linking Mexico City, Mexico, to the Canadian province of Alberta. The CANAMEX Corridor was defined by Congress in the 1995 National Highway Systems Designation Act and includes the entire length of I-15 through Montana.

1.7.2 Traffic Volumes and Congestion

Traffic congestion at an intersection or on a roadway segment is expressed in terms of Level of Service (LOS) using letter grading ranging from A for excellent conditions to F for extremely poor conditions. LOS A represents the free-flow condition when there is no slowing or interference to the traffic flow. LOS F represents a complete breakdown in the flow of traffic and, in some extreme cases, a complete stop condition (traffic jam). A graphical representation of LOS at intersections and on roadways is shown in **Figure 3-9** and **Figure 3-10**. Throughout the state of Montana LOS B is MDT's minimum acceptable standard for interstate highways in both rural and urban areas. LOS C is acceptable for urban/suburban surface streets and ramp intersections.

Currently, the most congested places in the study area are at signalized intersections on the west side of I-15 at the Capitol interchange. Most intersections and segments in the study area operate at LOS A or B. However, by 2025, reduced LOS is anticipated at every interchange and LOS C is projected on I-15 between the Cedar Street interchange and the Capitol interchange. At the location of every interchange with I-15, there are several intersections with cross-streets or ramps that are anticipated to operate at LOS F unless improvements are made.

1.7.3 Crashes

I-15 runs through Helena and the Helena Valley and is a major barrier for east-west travel. This barrier has proved problematic for emergency response vehicles needing to get to the east side of I-15. In addition, limited access to I-15, especially in the north, also has created response difficulties.

Analysis of the past five years of crash data for the study area indicates there are problem areas along the I-15 Corridor where crashes frequently occur, primarily at

interchange ramp merge/diverge locations. As traffic volumes continue to increase, it is likely that the number of crashes will also increase.

The crash rate for I-15 within the study area from 1996 to 2000 was 1.52 crashes per million vehicle miles of travel (MVM) (see Section 3.4.2.3 for crash analysis). This rate is 31% higher than the statewide interstate crash rate of 1.16 crashes per MVM during the same time period. During this period there were 336 crashes that occurred along I-15 within the study area. Of these crashes, 113 included personal injuries. There were no fatalities.

The largest number of crashes occurred between Reference Post (RP) 192-193 and RP 193-194. These segments include the Capitol and Cedar Street interchanges with I-15. Of the 139 crashes that occurred within these sections of I-15, approximately one-third were at intersections within an interchange complex and nearly two-thirds were caused by a collision between two or more vehicles. There also were a large number of crashes between RP 187 and RP 189 (in the southern part of the study area) that were attributed to animal/vehicle collisions.

1.8 Pedestrian and Bicycle Accommodations

Most cross-streets, I-15 and I-15 interchanges have no accommodations for pedestrians and bicyclists. The existing problem for most pedestrians and bicyclists in the study area is primarily in crossing I-15. The existing bridges, except for the recently reconstructed Cedar Street bridge, do not provide for a safe means of crossing by pedestrians and bicyclists. Montana City interchange has a separate pedestrian structure that was completed in 2000.

1.9 Future Land Use/Economic Development

1.9.1 Land Use Advisory Group Input

MDT developed a transportation demand model (the Model) to forecast future transportation needs in the greater Helena area which includes a region extending about 32 kilometers (20 miles) in every direction from the city of Helena. To predict future needs for the EIS horizon year of 2025 the future amount and location of population and employment are required as an input to the Model. A nine-member Land Use Advisory Group made up of local public and private representatives was convened in August 2001 to help develop this forecast for the EIS.

Using Census Bureau county-level population forecasts and interpolating for the 2025 forecast year, a future greater Helena area population of 81,250 persons was calculated. This growth of 24,250 persons over the 2000 census figure was used to estimate an increase of just over 10,000 new households in the 25-year period. Based

on current rates of jobs per population, 18,170 new jobs were calculated to be added by 2025.

The Land Use Advisory Group prepared maps showing their forecast of where future households and places of employment would locate based on their familiarity with the area and their own assumptions of where growth would most likely occur under three different scenarios. These scenarios addressed how growth patterns would be different if no major improvements were made to I-15, or if a new northern interchange or a new southern interchange was added to the system (see Section 3.2.2.3 for a more detailed description of this process). These assumptions for land use growth were then incorporated into the Model, which was applied to the different transportation alternatives developed for the I-15 Corridor.

1.9.2 Locally Identified Plans for Future Development

Projected increases in population and employment in and around Helena will result in a strain on the existing transportation infrastructure. Known and anticipated development is occurring in the vicinity of the study area.

In addition to the growth and development forecasts projected by the Land Use Advisory Group, interviews were conducted with elected officials, city and county employees and members of the general public to identify areas within or near the study area where development was most likely to occur. These areas are shown in **Figure 3-3** and discussed in Section 3.2.2.2.

The following is an overview of current and future plans, programs, and development occurring in the vicinity of the study area for both the city and the two counties:

Lewis & Clark County

Future land use and development at the county level is guided by the policies and mapping contained in the *Lewis & Clark County Comprehensive Draft Plan*, January 2000. The future land use strategy identifies three Urban Areas, three Transition Areas, and two Special Use Areas within the vicinity of the I-15 study area and Helena Valley (see Section 3.2.2.2 and **Figure 3-3** for more information).

Three Urban Areas adjacent to Helena are identified as compatible with planned municipal infrastructure within a 20-year horizon. These areas could eventually annex to the city of Helena with an emphasis on high-density development, infill, and mixed-use projects. These areas include the west side of Helena, the area southeast of Helena (on both sides of I-15), and an area north of Helena (roughly between I-15 and Green Meadow Drive).

Transition Areas are identified as those areas that contain existing low-density development and community services, and could accommodate additional infill development, but are located beyond a reasonable service boundary for the 20-year planning horizon. In these areas, existing utility systems and roadways would be upgraded and expanded, and future transportation linkages would need to be developed to serve these areas. The Transition Areas include the west Helena Valley, the northwest Helena Valley, and the southeast Helena Valley.

The Lewis & Clark County Urban and Transition Areas are discussed further in Chapter 3.0 and are shown in **Figure 3-3**.

Two Special Use Areas are identified in the Comprehensive Plan: Fort Harrison Federal Community (west of Helena) and the ASARCO Smelting Facility (East Helena). Due to their unique nature, separate studies would be conducted by Lewis & Clark County for future development potential.

Lewis & Clark County requires development outside of the Transition Areas to be self-sufficient (on-site wells and septic, private roadways). Development density would be dependent upon the level of infrastructure provided by the developer, environmental constraints, and area design standards. Overall, the County suggests the offering of incentives to encourage cluster development, a development design that concentrates buildings in specific areas to allow the remaining land for other uses such as recreation, common open space, or preservation.

City of Helena

The collective vision for the future of Helena and its immediate surroundings serves as the starting point for the *2001 Growth Policy Plan*. The *Growth Policy Plan* is not a detailed document with specifics about neighborhoods or functional areas, but establishes basic objectives and policies for generalized patterns of future land use and development.

The city of Helena has realized a significant amount of growth in all sectors since 1994, particularly in housing and commercial development. As a result, the City is addressing growth through a variety of planned and programmed improvements in the areas of fire protection, capital investment and infrastructure, expansion of medical services, potential land annexations, transportation and safety improvements, and parks and recreational facilities.

Capital improvements planned to accommodate future development include an additional water supply tank (completed in 2002), as well as wastewater treatment facility upgrades, replacements and extensions. Water and sewer infrastructure would need to be extended to accommodate growth and development east of Helena.

The most immediate areas of growth are occurring to the north and west of Helena; therefore, placing a burden on existing City water sources.

The City has approved several major subdivisions over the past seven years, and a number of additional subdivisions are currently under review. Plans for the area north of Helena include residential and commercial developments as well as annexation requests. The residential component of future development is primarily larger lot single-family residential with some medium single-family lots, low-income housing, and mixed-use. Future development potential for the area just east of Helena is strong where the new water tank would serve the Padbury property, the Saddle Drive vicinity, as well as areas on the east side of I-15. Potential for significant new development exists between the airport and US 12 with light industrial and commercial expansion opportunities, new railroad crossings, and development connections. Furthermore, residential subdivision development is occurring with increased growth in the East Helena area and north of Jefferson County. Likewise, older platted lands on the western edge of town (located outside the Helena City boundaries, but identified as potential annexation areas) are filling in with residential development.

In the city's *Growth Policy Plan*, the city also identified the two Special Use Areas (identified by Lewis & Clark County) as potential areas of annexation. Fort Harrison is already served by municipal water and sewer.

Jefferson County

The I-15 study area extends into the northern portion of Jefferson County to the Montana City interchange. A significant connection exists along the I-15 Corridor between the two municipalities (city of Helena and Montana City) regardless of municipal and county boundary lines. Approximately one-half of all I-15 traffic south of Helena exits at Montana City. Along this corridor, Jefferson County officials expect continued suburban development and residential growth. Between Montana City and the county line, nine major and minor subdivisions are either proposed, have preliminary plat approval, or have recently received final plat approval and have not yet sold lots within the subdivisions. Future developments such as these are primarily residential, with one commercial proposal at the I-15 and Montana City intersection. The Montana City Town Center is another substantial mixed-use development currently being planned at the hub of Montana City. The Jefferson County Planning Board is currently in the process of creating a new Growth Policy Plan, expected to be available in 2003.

1.10 Public and Agency Involvement Input

As part of the I-15 Corridor EIS, an extensive public and agency involvement process was undertaken to guide the development of the EIS and collect input on study area

issues, the purpose and need for the project, the development of improvement options, and the alternatives screening process. The process included numerous meetings with advisory groups, neighborhood groups, agencies, business groups, landowners, developers, and the general public.

In particular, for this project, two advisory groups were formed to advise the Project Team (consisting of MDT, FHWA, and the prime consultant preparing the EIS analysis) on various aspects of the project. These two groups, an Advisory Committee (AC) and an Interdisciplinary Team (ID Team) (resource and permitting agencies and local representatives), were vital to the process of establishing project goals and identifying corridor improvement options that would satisfy these goals as well as meet the purpose and need for the project. The project goals provided the basis for preparing evaluation criteria used to refine the list of alternatives studied in the DEIS and identify the Preferred Alternative evaluated in this FEIS. The project goals and the process followed for refining, or "screening" alternatives is described in Chapter 2.0.

General public outreach included three large public workshops, a public hearing on the DEIS, project newsletters, a project hotline, a project Web site, news releases and a public opinion survey. All of the outreach activities were designed to provide numerous opportunities for interested parties to participate in and contribute to the EIS process. The intent of these activities is to solicit information, ideas and opinions from the public and to provide them with current information about the I-15 Corridor EIS and the EIS process.

More information on the public and agency outreach program is included in Chapter 2.0 and Chapter 7.0.

1.11 Conclusion

The identified needs for improvement in the I-15 Corridor between the Montana City and Lincoln Road interchanges include:

- ▶ Future levels of congestion along the interstate that exceed statewide standards.
- ▶ Future high congestion levels at every interchange.
- ▶ Congestion at the few existing roadway crossings of I-15.
- ▶ Lack of alternate connections across I-15.
- ▶ Crash rate that exceeds the statewide interstate average by 31%.
- ▶ Crash rate that is increasing every year.

- ▶ Public opinion noting the difficulty of getting on and off existing interchanges, the lack of sufficient interchanges and the difficulty experienced crossing I-15 on existing east-west roads.
- ▶ Growing population and employment base which will increase pressure on the existing transportation facilities.
- ▶ Five bridges that are functionally obsolete and need to be replaced in order to meet 2025 travel demand at a level of service that meets MDT standards for traffic.
- ▶ Interchange design that is below acceptable standards in two locations.
- ▶ Lack of adequate pedestrian and bicycle crossings.

Based on the comparative evaluation of alternatives presented in the DEIS and the public and agency input received during the 45-day DEIS comment period, Alternative 1 is identified in this FEIS as the Preferred Alternative.

Actual construction of the Preferred Alternative will be done in sequential phases as corridor needs develop over the next 20 years and as funding becomes available. Individual components of the Preferred Alternative, such as rebuilding the Capitol interchange or replacing the I-15 bridges over the Montana Rail Link, may require staged construction in which smaller or less costly elements of the entire improvement are put into place prior to completion of all parts of the improvement. Two or more separate projects spread over a number of years may be required to complete the larger and more complex improvements identified in this FEIS.

CHAPTER 2.0: ALTERNATIVES

2.1 Introduction

The National Environmental Policy Act (NEPA) of 1969 and subsequent legislation requires that the EIS process consider a reasonable range of alternatives including a No-Action Alternative, and objectively evaluate them at comparable levels. The Council on Environmental Quality has described reasonable alternatives as those that are practical and feasible from a technical and economical standpoint and using common sense (rather than simply desirable from an applicant's viewpoint), and those are proposed by the agency in response to the purpose and need for the project. This chapter describes the process used to identify the reasonable alternatives that were fully assessed in the DEIS, provides the concepts used to define each alternative, and identifies the Preferred Alternative for the FEIS.

Following the DEIS 45-day public review period, which concluded on April 7, 2003, Alternative 1 (new interchanges at South Helena and Custer Avenue, and interchange improvements at Capitol) was identified as the Preferred Alternative. This was based on the alternatives analysis described in the subsequent sections of this chapter, comments received from the public on the DEIS, input from local, state and federal agencies, recommendations of the project Advisory Committee, and full consideration of the economic, social and environmental impacts of the proposed improvements (Chapters 4.0 and 5.0).

Alternative 1 was identified as the alternative that best meets purpose and need, project goals, and the local communities' needs and desires. In addition, Alternative 1 has fewer environmental impacts than Alternative 2 as listed below:

- ▶ Proposed interchanges are located in Urban Areas (as defined by the city and county) adjacent to city limits. The Custer interchange would be consistent with the current urban area zoning and land use character near Custer Avenue. City infrastructure can be easily extended to accommodate expected growth in this area without contributing to leapfrog development patterns. Growth and development associated with the Forestvale interchange under Alternative 2 would largely occur in a designated transition area where needed infrastructure is not in place or programmed.
- ▶ Alternative 1 will have no direct impacts on surface water quality, water resources or floodplains. Alternative 2 improvements associated with the Forestvale interchange could result in direct impacts to water quality in Tenmile Creek and greater potential for indirect impacts to floodplains along Tenmile and Silver Creeks.

- ▶ Direct and indirect impacts to wetlands for Alternative 1 are fewer with only 0.50 hectare (1.24 acres) of non-jurisdictional Class III and IV wetlands impacted. Alternative 2 would result in direct and indirect impacts to 2.12 hectares (5.54 acres) of non-jurisdictional Class II, III and IV wetlands and 22 square meters (240 square feet) of Class III jurisdictional wetlands.
- ▶ Alternative 1 has less potential for direct impacts to threatened and endangered species and their habitat, primarily due to the more urban nature of the area.
- ▶ Impacts to air quality are slightly less with Alternative 1 due to a reduction in vehicle miles traveled and vehicle hours traveled.
- ▶ Improvements associated with the proposed Custer Avenue interchange (Alternative 1) are located in areas with lower susceptibility to liquefaction and seismic impacts than are the improvements associated with the proposed Forestvale interchange (Alternative 2).

Section 2.8 fully describes the No-Action Alternative, the Preferred Alternative and Alternative 2. Chapters 4.0 and 5.0 discuss impacts and mitigation associated with both build alternatives as well as the No-Action Alternative.

The alternatives development process was undertaken by using public, Advisory Committee (AC) and agency (Interdisciplinary Team) input. The following steps were taken to develop and analyze alternatives leading to the identification of the Preferred Alternative:

- ▶ **Visioning Process.** A workshop was held with the project Advisory Committee to determine desires of the community.
- ▶ **Definition of Purpose and Need Statement and Project Goals.** This included development of overall goals and objectives for the project and the reasons for improvements to the corridor.
- ▶ **Development of Transportation Improvements.** The initial identification and categorization of a comprehensive range of transportation improvements was based upon a scoping process that included public and agency involvement through meetings, workshops, and a public opinion survey.
- ▶ **Development of Evaluation Criteria.** Criteria were developed, based on project goals and purpose and need, by which each potential transportation improvement was evaluated. Both quantitative and qualitative measures were included in a wide range of categories that addressed mobility and environmental considerations.
- ▶ **Conceptual Improvement Options Development and Screening.** Developed from the comprehensive range of improvements, these conceptual improvement options

(interchange locations and supporting elements) were evaluated to identify the most reasonable and feasible.

- ▶ **Detailed Improvement Options Development and Screening.** The conceptual improvement options were evaluated in greater detail.
- ▶ **Draft EIS Alternatives.** A reasonable range of feasible alternatives was selected for analysis in the DEIS.
- ▶ **Final EIS Alternatives.** Following receipt of comments from the DEIS 45-day public/agency review period, input from the Advisory Committee and local governments, and review of the DEIS, Alternative 1 was identified as the Preferred Alternative. All comments received on the DEIS and responses to those comments are included in Volume 2, Appendix A.

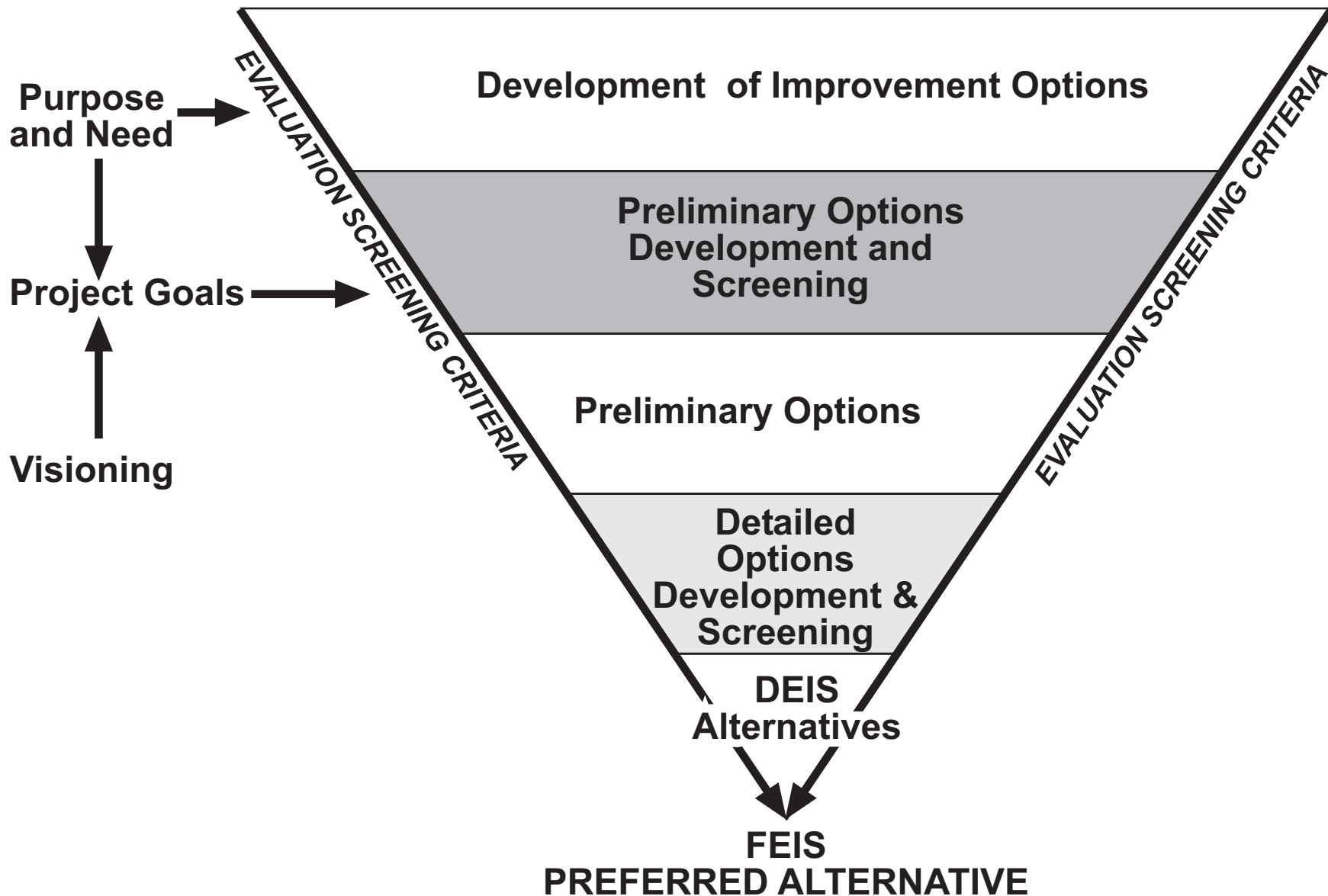
The *I-15 Alternatives Development Report 2003* prepared for this EIS presents a detailed description of the work effort undertaken during each of the steps leading to the preparation of the EIS. Copies of the *I-15 Alternatives Development Report, 2003* are available for review by request from MDT Environmental Services. **Figure 2-1** provides a graphical illustration of the overall alternatives screening process.

2.2 Agency Coordination and Public Involvement Process

Agency coordination and public involvement activities were specifically planned to be open, inclusive, and ongoing throughout the EIS process. This process was designed to respond to the high level of interest within the community concerning future improvements to the I-15 Corridor.

The process included numerous outreach activities to ensure a high level of public awareness of the project and a wide range of opportunities for public input, review and comment. These activities included agency and public scoping meetings, public workshops, agency briefings, presentations to local groups and organizations, newsletters, a project Web site and telephone information hotline, an extensive media information program, a public opinion survey, the use of a project Advisory Committee, a public hearing on the DEIS, and the prescribed 45-day public and agency review period following publication of the DEIS. A 30-day public and agency review period will follow publication of the FEIS. Special effort was made to reach low-income and minority communities located within the study area and those who use the I-15 Corridor.

To assist in gaining a broad understanding of community issues and concerns, a 19-member project Advisory Committee was formed at the start of the project development process. Advisory Committee members were selected to represent a broad and balanced cross section of groups and individuals with a strong interest in identifying existing problems and potential transportation solutions within the study



area. This group, which met ten times between September 2001 and February 2003, provided valuable advice on the most important elements of the project, including development of Purpose and Need, the identification of potential corridor improvements, the selection of DEIS alternatives, and input for selection of the Preferred Alternative. A more complete description of the Advisory Committee, including a list of members and a summary of each meeting, is presented in Section 7.3.3.

Public input concerning the development and analysis of potential transportation improvements was gathered through a variety of public outreach efforts. Several opportunities were provided during public scoping to identify important transportation and community issues to be addressed in the EIS. Following the formal scoping process, additional activities were initiated to develop the project goals, evaluation criteria, screening process and specific improvement options. The primary activities are briefly discussed below with the full range presented in more detail in Chapter 7.0.

2.3 Alternatives Development and Screening Process

The alternatives and additional improvements presented in this chapter were developed through an extensive public and agency outreach program that began with publication of a Notice of Intent in the Federal Register on August 8, 2001. The process followed to develop a range of potential improvements and then screen and refine them to those evaluated in the DEIS is described in the following subsections. Following publication of the DEIS and a 45-day review period a Preferred Alternative (Alternative 1 in the DEIS) was identified.

2.3.1 Visioning Process

A visioning exercise was used as an initial step for the overall alternatives development process. Visioning is a process utilized during the early steps of community planning that provides a 'look ahead' to desired community values, qualities and opportunities, and seeks to determine the shared significance of the future. The visioning process provides insights into local resources available or necessary to achieve the desired community vision. Visioning generated input that was useful for identifying issues, defining project goals, formulating evaluation criteria, developing improvement options, and evaluating those options.

Two questions were presented to the Advisory Committee as part of the visioning process:

1. What three (plus or minus) things do you like most about living in this region that you would like to see preserved into the future?

2. What initial thoughts on transportation-related improvements could help maintain or achieve these qualities in the future?

The responses to these questions and the resulting discussions revealed the group's most important qualities of life and desired transportation improvements for the community. High on the list of quality of life values expressed by the group were maintaining a strong sense of place, preserving both economic opportunity and the social and historical fabric of the region, and protecting the natural environment and scenic quality of the study area. The list of potential transportation improvements needed to preserve or enhance these values included providing more and better east-west roads, new or improved access points along the interstate, increased opportunities for pedestrians and bicyclists, protecting neighborhoods against adverse traffic impacts, and improving safety.

Responses to both questions provided direct input for the definition of overall project goals and established the basis for developing the general criteria used to screen potential corridor improvement options.

The following transportation-related improvements were identified as being most important in maintaining or achieving these qualities in the future:

- ▶ More and better east/west roads
- ▶ More transportation choices
- ▶ A well-interconnected network of streets and roads
- ▶ Sensitivity to schools and traffic patterns for safety
- ▶ A better transit/bus service
- ▶ Safety improvements on Custer Avenue
- ▶ More interstate on/off exits
- ▶ Mitigation of traffic impacts on existing neighborhoods
- ▶ Better way across I-15 to reduce pressure on Capitol interchange (all modes)
- ▶ Better access for emergency vehicles to the interstate throughout the valley
- ▶ Potential improvements should be consistent with the community's goals
- ▶ Bike or walking paths connecting Helena with points south along I-15
- ▶ Improvements to N. Montana Avenue to relieve congestion
- ▶ Improved secondary arterials in all directions
- ▶ Elevated roadways should be considered
- ▶ Streets should be platted ahead of development
- ▶ Pedestrian and bicycle paths should be kept clean/well swept

2.3.2 Definition of Project Goals

The primary purpose of the EIS process is to develop reasonable solutions that will improve transportation operations and safety along the I-15 Corridor while avoiding or minimizing adverse environmental effects. To help guide the development of these potential solutions and satisfy the purpose and need for the project, project goals were developed.

Using the purpose and need statement, the community values developed during the visioning exercise, and their own knowledge of the study area, the Advisory Committee recommended an initial set of goals. The original goals were refined based on agency and public input. This process resulted in the formation of the eight project goals and subgoals listed below. No priority order was established or intended for these goals and all were given equal weight and importance.

Project Goal 1

Minimize the barrier effect of I-15 by creating more transportation connections and improving the transportation network for all forms of east-west travel across I-15.

Subgoals:

- a) Improve east-west travel for cars and trucks and other modes of travel.
- b) Improve emergency access for fire, police and ambulances, and access to medical services.
- c) Include pedestrian and bicycle facilities as a substantial part of improvements.

Project Goal 2

Improve mobility and efficiency between origination and destination points for all modes of travel.

Project Goal 3

Provide a transportation system that is responsive, complimentary and coordinated with all local planning efforts and that recognizes existing and planned infrastructure developments (e.g. growth plans and policies, water, sewer, government lands, parks, hospitals, schools, transportation).

Project Goal 4

Provide a safe transportation system for all users in all modes of travel.

Project Goal 5

Minimize adverse impacts to environmental resources of the study area.

Project Goal 6

Minimize adverse impacts to neighborhood, community and business resources of the study area.

Project Goal 7

Develop implementable projects, fiscally and practically.

Subgoals:

- a) Where possible, consider multiple improvements at the same time.
- b) To the extent practicable, seek to maximize potential funding through new and existing sources.

Project Goal 8

Maintain or improve the operational efficiency of I-15 as a regional, interstate and international highway.

These goals provided the basis for creation of the evaluation criteria and the initial development of transportation improvements.

2.3.3 Development of Conceptual Screening Evaluation Criteria

The evaluation process for the I-15 Corridor DEIS alternatives focused on an assessment of the various transportation improvements against performance measures and evaluation criteria. The process involved a conceptual screening to advance the improvement options that best met project purpose and need and the project goals, a detailed screening to identify the most effective options for inclusion in the DEIS, and a comprehensive NEPA environmental analysis and final screening to support the identification of a Preferred Alternative in the FEIS. The environmental analysis of the Preferred Alternative, Alternative 2 and the No-Action Alternative is found in Chapters 4.0 and 5.0.

With the assistance of the project Advisory Committee, evaluation criteria were developed with the following guidelines:

Evaluation criteria should (be):

- ▶ Relevant to purpose and need, and project goals.
- ▶ Understandable by project participants and the community.
- ▶ Efficient in the use of project resources by emphasizing more detailed analysis on the most reasonable improvement options.
- ▶ Highlight differences between options.
- ▶ Quantifiable/measurable criteria.

- ▶ Appropriate in level of detail.
- ▶ Lead to identification of a technically and economically feasible preferred alternative.

With the above guidelines in mind, evaluation criteria for conceptual screening were developed for each of the eight project goals. The criteria needed to support the purpose and need statement and also provide a useful means of measuring the effectiveness of potential improvements when compared to each specific goal.

Matrices were created to present the evaluation criteria and measures related to each goal. The level of detail for the conceptual evaluation of improvements was limited to measures easily gathered or described. Results were tailored to provide a reasonable order of magnitude comparison among the options being considered. The complete list of evaluation criteria is included in the *Alternatives Development Report*, available for review by request from MDT.

2.4 Potential Transportation Improvements Considered

A comprehensive list of potential transportation improvements was compiled and presented to the project Advisory Committee. Sources used in the identification of potential improvements included public input, previously completed studies, local and regional planning documents, and a conceptual analysis of the study area issues and constraints. **Figure 2-2** displays the range of improvements suggested through the public and agency involvement process. The list below summarizes the individual improvements initially considered.

- ▶ Sierra Road interchange
- ▶ Forestvale Road interchange
- ▶ Forestvale Road interchange with new frontage roads
- ▶ Custer Avenue interchange
- ▶ Combination interchange at Custer Avenue and Cedar Street
- ▶ Capitol interchange improvements
- ▶ Broadway underpass
- ▶ Broadway interchange
- ▶ Belt View Drive interchange
- ▶ Saddle Drive interchange
- ▶ Interchange at existing South Hills Road/County Road 282 overpass
- ▶ Interchange at the Jefferson/Lewis & Clark County line

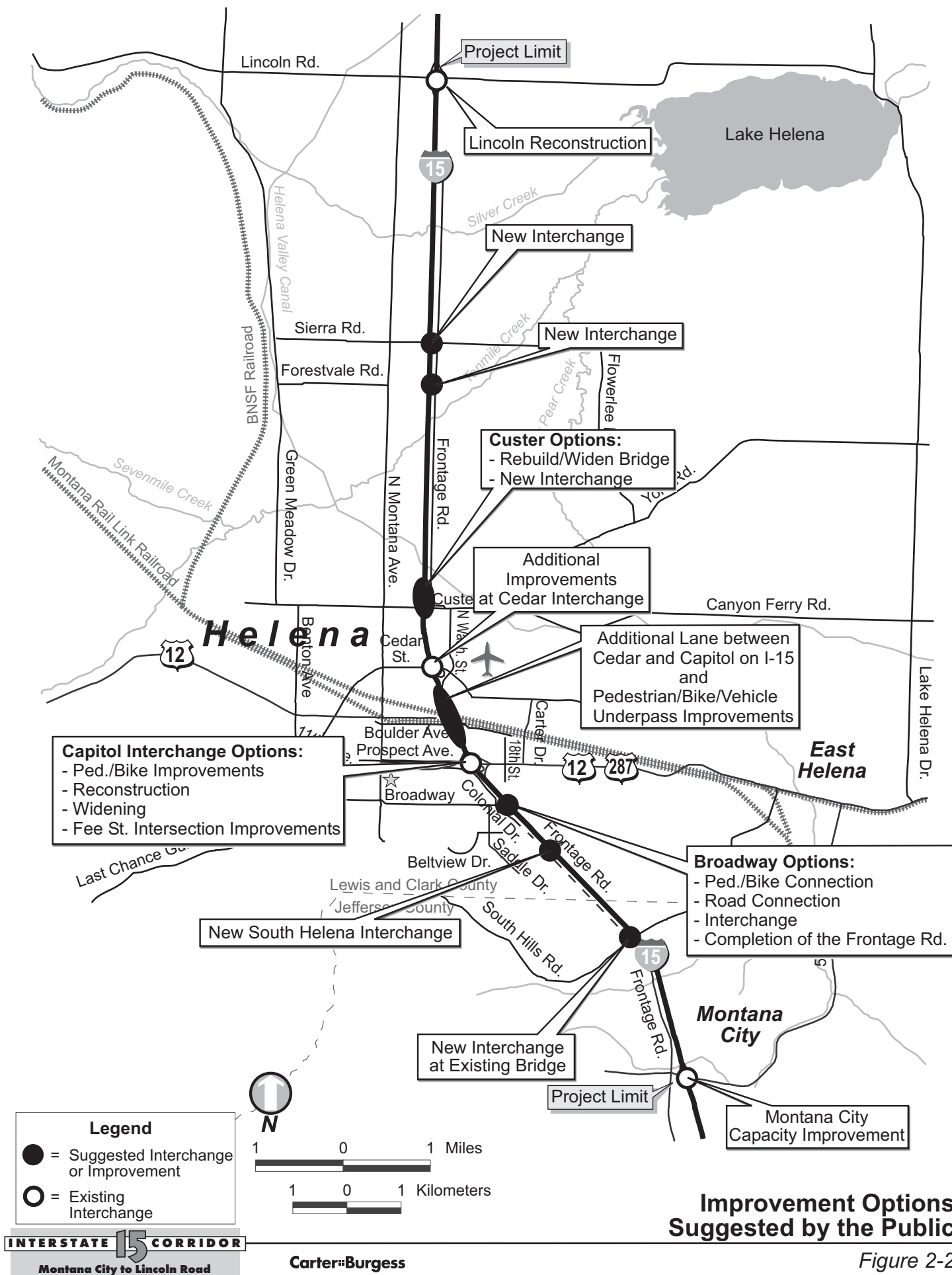


Figure 2-2

- ▶ Connect and pave Frontage Road to Colonial Drive
- ▶ Widen N. Montana Avenue
- ▶ Fix “Malfunction Junction” (junction of N. Montana Avenue/US 12/Helena Avenue)
- ▶ Lincoln Road interchange improvements
- ▶ Acceleration/deceleration lanes between Custer and Capitol interchanges
- ▶ Broadway connection to Capitol interchange via Frontage Road
- ▶ Broadway neighborhood traffic mitigation
- ▶ Ramps connecting to 18th Street to and from the south
- ▶ Montana City interchange improvements (plus Road 282/Road 518 intersection improvements)
- ▶ Other frontage roads
- ▶ Transit improvements (park-n-rides, shuttles, etc.)
- ▶ Transportation Demand Management improvements (carpools, vanpools, flextime, etc.)
- ▶ Pedestrian and bicycle improvements
- ▶ East/west truck bypass
- ▶ Spot safety improvements (numerous locations)
- ▶ Upgrade I-15 railroad crossings
- ▶ Grade separation at N. Montana Avenue railroad crossings
- ▶ Boulder Avenue underpass improvements
- ▶ Auxiliary lanes or additional through lanes on I-15

With the assistance of the Advisory Committee the initial list of improvements was first organized into four fundamental categories: Unrealistic Options, Major Options, Supporting Elements, and Other Improvement Options. These four categories provided a starting point for considering potential corridor improvements with the eight project goals and the conceptual screening criteria to see which improvements best met purpose and need. Improvements could be, and often were, placed within more than one category and changes to the categorization occurred as more detailed analysis was completed.

No improvements were placed within the Unrealistic Options category which would have eliminated them from further consideration at that point in time. The Supporting Elements category was subdivided into two groups, those that appeared to compliment any of the Major Options (see Section 2.4.2) and those that seemed tied to only one or two Major Options (see Section 2.4.3).

The basis for each category (other than the Unrealistic Options category) is described in the following sections. Since none of the potential improvement options were considered by the Advisory Committee to be “unrealistic” this category is not described.

2.4.1 Major Options (stand-alone improvements for conceptual screening)

Improvements under this category included significant transportation improvements such as new or reconstructed interchanges that would require a major capital investment. These major options would likely have the greatest potential to address project goals and meet purpose and need.

Eight major options were defined for conceptual evaluation. Since some major options provided similar functions in the same general area along the I-15 Corridor, they were grouped together as representative locations. The eight major options are listed below along with some of the improvement features needed to make them work effectively.

1. I-15 interchange at:

- a. Sierra Road
or
- b. Forestvale Road
 - ◆ *Extend Forestvale Road east across I-15*

2. I-15 interchange at:

- a. Custer Avenue
 - ◆ *Includes bridge replacement*or
- b. Custer Avenue/Cedar Street combination
 - ◆ *Split access to provide better ramp spacing*

3. I-15/Capitol interchange improvements:

- a. Ramp safety improvements
 - ◆ *Eliminate northeast loop ramp*
 - ◆ *Add left turn movement at US 12 from northbound off-ramp*
 - ◆ *Separate southbound on-ramp movements*
- b. Single point interchange

- c. Fee Street improvements
- d. Connect Colonial Drive to interchange
- e. 18th Street ramps to and from south (located east of I-15 and west of Carter Drive)
 - ◆ *Shifts portion of I-15 access from Capitol interchange, allows for elimination of Capitol interchange ramps to and from south*
 - ◆ *Requires grade separation between southbound ramp and I-15*
- 4. **Broadway underpass at I-15:**
 - ◆ *Extend Broadway to US 12*
- 5. **I-15 interchange at Broadway:**
 - ◆ *Extend Broadway to US 12*
- 6. **I-15 interchange at:**
 - a. Belt View Drive
 - ◆ *Connect to US 12 and I-15 west side Frontage Road*or
 - b. Saddle Drive
 - ◆ *Connect to US 12 and I-15 west side Frontage Road*
- 7. **I-15 interchange at:**
 - a. South Hills Road/Road 282
 - ◆ *Connect to I-15 west side Frontage Road*or
 - b. County Line (Lewis & Clark County/Jefferson County)
 - ◆ *Connect to I-15 west side Frontage Road*
- 8. **N. Montana Avenue improvements:**
 - a. Widen between Custer Avenue and Sierra Road
 - b. Reconfigure "Malfunction Junction"

2.4.2 Supporting Elements

This category includes transportation improvements that would directly or indirectly supplement the major options under consideration, but likely not have the potential to fully satisfy purpose and need by themselves. Transportation improvements along or in close proximity to I-15 such as capacity enhancements, safety improvements,

structure rehabilitation and Transportation Demand Management (TDM) applications were considered for this category.

The transportation improvements that were categorized as supporting elements that could support all major options are as follows:

- 1. Lincoln Road interchange improvements**
 - ◆ Bridge replacement and widening
 - ◆ Ramp modification for sight distance improvements
 - ◆ Addition of turn lanes
 - ◆ Inclusion of sidewalks/shoulders for pedestrian and bicycle use
- 2. Montana City interchange improvements**
 - ◆ Bridge replacement and widening
 - ◆ Addition of turn lanes
 - ◆ Intersection improvements at Road 282/518
 - ◆ Inclusion of sidewalks/shoulders for pedestrian and bicycle use
- 3. I-15 auxiliary lanes**
 - ◆ Required to maintain interstate LOS B (location varies between each build alternative)
 - ◆ Continuous acceleration/deceleration lanes between interchange ramps
 - ◆ Requires bridge widening over railroad
- 4. Connect/pave west side of I-15 Frontage Road**
 - ◆ Acquire remaining right-of-way
 - ◆ Pave between Montana City (Road 518) and Colonial Drive
 - ◆ Upgrade to local design standards
- 5. Capitol interchange bridge replacement**
 - ◆ Widen roadway
 - ◆ Increase turn lane capacity
 - ◆ Inclusion of sidewalks/shoulders for pedestrian and bicycle use
- 6. Upgrade I-15 railroad crossings**
 - ◆ Improve or replace existing bridges
- 7. Spot safety improvements** (Source: Based on crash data, substandard cross sections, interchange level of service, etc.)
 - ◆ Widen I-15 shoulders
 - ◆ Increase I-15 acceleration/deceleration lane distances
 - ◆ Increase interchange turn lane capacities
 - ◆ Realign ramps/intersections

- 8. Improve Boulder Avenue underpass**
 - ◆ Confirm/refine east side connectivity
 - ◆ Pave between west side of I-15 and US 12
 - ◆ Upgrade to local design standards
- 9. Pedestrian/bicycle improvements** (Source: *Comprehensive Parks, Recreation and Open Space Plan, 1998*)
 - ◆ Provide dedicated pedestrian facilities at all I-15 roadway crossings
 - ◆ Provide on-street bike lane at Lincoln Road and Custer Avenue at I-15 crossings
 - ◆ Provide separated bikeway at Sierra Road and Road 282 I-15 crossings
 - ◆ Provide off-street trail at I-15 crossings at Silver Creek, Tenmile Creek, Broadway and vicinity of County Line
- 10. Transit improvements**
 - ◆ Identify potential route patterns for serving major activity centers
 - ◆ Identify potential park-and-ride locations
 - ◆ Identify general opportunities/constraints for transit service
- 11. Transportation Demand Management (TDM)**
 - ◆ Identify opportunities for development of local Transportation Management Association (TMA)
 - ◆ Identify potential TMA responsibilities
 - ◆ Identify TDM applications with greatest potential to influence I-15 travel demand
 - ◆ Flex-time work schedules
 - ◆ Carpool incentives
 - ◆ Shuttle/vanpool services
 - ◆ Pedestrian and bicycle amenities/programs
- 12. East/west truck bypass**
 - ◆ Improved connection east and west through Helena using N. Main, Cedar interchange, Airport Road, and Carter Drive

2.4.3 Supporting Elements (supplement to Major Option)

The transportation improvements that were categorized as supporting elements that would best serve as a supplement to specific major options are as follows:

- 1. Forestvale Frontage Roads—supplement to interchange at Forestvale**
 - ◆ Extend I-15 east side Frontage Road to Lincoln Road
 - ◆ Add I-15 west side Frontage Road between Forestvale Road and Sierra Road

2. Grade separate N. Montana Avenue and railroad—supplement to N. Montana Avenue improvements
3. Broadway neighborhood traffic mitigation—supplement to underpass or interchange at Broadway
 - ◆ Speed reduction strategies
 - ◆ Noise buffers
 - ◆ Connectivity modifications
4. Five-lane Cedar Street between I-15 and N. Montana Avenue—supplement to interchange at Custer
 - ◆ Four through lanes plus turning lanes

2.4.4 Other Improvements

Transportation improvements outside the I-15 Corridor or clearly beyond the project scope were identified in this category. This category includes improvements that are remote to the immediate study area and would be separated from this project but should still be considered as part of future local and regional transportation planning efforts. These suggested improvements are as follows:

1. Fix “Malfunction Junction” (junction of N. Montana Avenue/US 12/Helena Avenue)
2. Grade separation at N. Montana Avenue railroad crossings

2.5 Conceptual Screening of Major Options

The conceptual screening criteria were applied only to the eight improvements identified under the Major Options category. These eight improvements became the initial range of options to be evaluated at the conceptual screening level. All supporting elements were carried forward for further consideration and subsequent combining with the eight selected options. **Table 2-1** summarizes the key issues identified in the conceptual screening process and the primary reasoning for elimination or advancement of an option.

**Table 2-1
Conceptual Screening of Major Options**

| No. | Option Definition | Key Conceptual Screening Results | Advance Option? |
|------------|--|--|--|
| 1 | Interchange at Sierra Road or Forestvale Road | <ul style="list-style-type: none"> • Beneficial for emergency access. • Implementation and cost advantages. • School, park, and historic property impacts at Sierra Road considered fatal flaws. | <ul style="list-style-type: none"> • Forestvale Road was advanced. • Sierra Road was not advanced due to potential impacts to school, park and historic properties. |
| 2 | Interchange at Custer Avenue or Custer Avenue/Cedar Street Combination | <ul style="list-style-type: none"> • Close spacing to Cedar interchange a concern. • Serves existing and potential new growth areas. • Provides good roadway connectivity and access to community resources. • Relieves/compliments Cedar interchange. | <ul style="list-style-type: none"> • Advanced (combined with Cedar if necessary). |
| 3 | Capitol Interchange Improvements | <ul style="list-style-type: none"> • Most congested location in system. • Immediate safety and capacity needs. • Short-term safety improvements defined and recommended by MDT. | <ul style="list-style-type: none"> • Advanced. |
| 4 | Broadway Underpass at I-15 | <ul style="list-style-type: none"> • Minimal ROW required, lower cost, easy to implement. • Improves access to hospital. • Relieves US 12 through traffic at Capitol interchange. • Potential traffic impacts to Broadway neighborhoods a concern. | <ul style="list-style-type: none"> • Although a Broadway underpass helps to meet purpose and need, Broadway was not advanced as a major option due to significant neighborhood opposition expressed in written comments and at public meetings (added as supporting element only for pedestrian and bicycle use). Concerns included increased traffic volumes, safety of school children, and noise impacts to residential property. It was determined that improvements at the Capitol interchange that include a Colonial Drive connection could nearly replace the function that a Broadway underpass would serve. |

continued

Table 2-1 (continued)
Conceptual Screening of Major Options

| No. | Option Definition | Key Conceptual Screening Results | Advance Option? |
|------------|--|---|---|
| 5 | Interchange at Broadway | <ul style="list-style-type: none"> • Close spacing to Capitol interchange a concern. • Relieves ramp and US 12 through traffic at Capitol interchange. • Potential traffic impacts to Broadway neighborhoods a concern. | <ul style="list-style-type: none"> • Not advanced due to interchange spacing problems and significant neighborhood opposition expressed in written comments and at public meetings. Concerns included increased traffic volumes, safety of school children, and noise impacts to residential property. |
| 6 | Interchange at Belt View Drive or Saddle Drive | <ul style="list-style-type: none"> • Supports proposed development area southeast of I-15. • ROW may be donated at Saddle. • Saddle and Belt View connect to residential streets west of I-15. Potential traffic impacts to neighborhoods a concern. • Development of west side Frontage Road important as connection. • Potential to relieve congestion/compliment Capitol interchange. • Potential for private funding. | <ul style="list-style-type: none"> • Advanced Saddle Drive interchange only. • Belt View Drive not advanced due to greater potential traffic and neighborhood impacts, including noise, property acquisitions, and safety of neighborhood children. |
| 7 | Interchange at S. Hills Road/Road 282 or County Line | <ul style="list-style-type: none"> • Possible implementation advantages due to existing overpass at S. Hills Road. • Minimal current or planned development in area. • Limited benefit provided to existing transportation facilities and community resources. | <ul style="list-style-type: none"> • S. Hills Road/Road 282 or County Line interchange were not advanced due to potential traffic and neighborhood impacts. |
| 8 | N. Montana Avenue Improvements | <ul style="list-style-type: none"> • Outside the immediate I-15 Corridor study area. • Limited benefit to existing I-15 interchanges and crossings. | <ul style="list-style-type: none"> • Not advanced (moved to Other Improvement options category). |

2.5.1 Major Options Eliminated

The conceptual screening process resulted in the elimination of six major options from further consideration. The options eliminated and reasons are:

- ▶ *Sierra Road Interchange.* Fatal flaws from environmental and community impacts such as historic building, park, and proximity to existing homes and elementary school.
- ▶ *18th Street Ramps to and from South (part of the Capitol interchange improvements).* The 18th street ramps were not carried forward because they only address traffic flow to and from the south on I-15. Most traffic using this connection would still utilize the Capitol interchange which would still need to be improved to accommodate the additional traffic from 18th Street and traffic flow to and from the north. Since a reconstructed Capitol interchange will adequately address traffic flow between US 12 and south I-15, the 18th Street ramp connection would not be necessary at this time.
- ▶ *Broadway Underpass.* This was identified as a needed improvement to provide an alternate east-west I-15 crossing, connecting US 12 east of I-15 and East Helena with the hospital area and Broadway corridor. MDT's Helena traffic model showed that as well as providing better access to the hospital area, a Broadway underpass also would likely increase traffic volumes substantially on the residential portion of Broadway by providing an alternate route to and from the state capitol buildings. It was screened out in part because the function of a Broadway underpass can be largely served by other improvements, including the Capitol interchange connection to Colonial Drive. Additionally, Broadway underpass as a vehicular traffic corridor received little support from the public and strong opposition from the Broadway neighborhood. While the roadway underpass at Broadway was eliminated, the option to provide an underpass for pedestrians and bicyclists at this location was carried forward as a supporting element (see Section 2.7 for further discussion).
- ▶ *Interchange at Broadway.* This improvement would provide advantages similar to the Broadway underpass discussed above. Significant neighborhood opposition was expressed to this alternative. Additionally, operational concerns were identified with the close spacing between this new interchange and the Capitol interchange.
- ▶ *Belview Drive Interchange.* This interchange location does not support future land use projections as well as the Saddle Drive location and is more likely to result in traffic impacts to existing neighborhoods. This option received minimal support from the Advisory Committee.
- ▶ *Interchange at S. Hills Road/Road 282 or County Line.* This improvement offered limited transportation benefits as most planned development south of the Capitol

interchange is north near the potential Saddle Drive interchange. No support as a top three preference was expressed by the Advisory Committee.

- ▶ *N. Montana Avenue Improvements.* These improvements are outside the immediate I-15 Corridor study area and were found to have limited benefit to existing I-15 interchanges and crossings. A number of other transportation improvements are currently programmed for N. Montana Avenue or are being evaluated separately as part of different project efforts. This option received minimal support from the Advisory Committee.

2.5.1.1 Saddle Drive/South Helena Interchange

As a result of strong opposition from the public at the June 2002 public meeting, the Saddle Drive interchange concept was modified to eliminate a direct connection from the new interchange to Saddle Drive. Concerns were raised about potential negative impacts to the neighborhoods along Saddle Drive and connecting streets that could result from an increase in traffic. The interchange concept was modified to include a connection to the west side Frontage Road but not Saddle Drive. To avoid confusion, the southern interchange was renamed the "South Helena interchange."

2.5.2 Options Advanced

The following four conceptual options were recommended by the Advisory Committee for advancement for full evaluation in the DEIS:

1. South Helena Interchange

- ▶ New interchange at I-15 approximately 2.7 kilometers (1.6 miles) south of the Capitol interchange (distance measured from middle of interchange configurations)
- ▶ New bridge crossing I-15
- ▶ Connect to west side Frontage Road
- ▶ No connection to existing Saddle Drive as part of this project
- ▶ Future connection(s) to US 12 on east side (currently planned and funded by others)
- ▶ Pedestrian and bicycle facilities

2. Capitol Interchange

- ▶ Short-term ramp safety improvements at existing Capitol interchange
- ▶ Interchange reconstruction including:
 - ◇ I-15 bridge replacement and widening

- ◇ Pedestrian and bicycle facilities
- ▶ Optional interchange configurations could include:
 - ◇ Direct ramp connections to Colonial Drive
 - ◇ Fee Street intersection improvements
 - ◇ Improved access to hospital area

3. Custer Interchange

- ▶ New interchange at Custer Avenue and I-15
- ▶ I-15 bridge replacement
- ▶ Optional interchange configurations could include auxiliary lane or collector/distributor lane connections to Cedar Street interchange
- ▶ Pedestrian and bicycle facilities
- ▶ Conceptual design for widening of Custer Avenue between N. Montana Avenue and N. Washington Street includes a maximum width of four 3.6-meter (12-foot) through lanes with a 3.6-meter to 7.3-meter (12-foot to 24-foot) median/turn lanes plus the pedestrian/bicycle envelopes as described in Section 4.8.2. Final design will determine the exact configuration.

4. Forestvale Interchange

- ▶ New interchange at Forestvale Road and I-15
- ▶ New bridge crossing I-15
- ▶ New extension of Forestvale Road between the east side Frontage Road and N. Montana Avenue
- ▶ Pedestrian and bicycle facilities

These four options demonstrated the best potential to address purpose and need and project goals, either individually or in combination. The Advisory Committee also recommended that making combinations of these options (such as combining South Helena and Capitol interchanges as an alternative) should be deferred until further detailed analysis was completed for each individual location. This would provide a better understanding of the strengths and weaknesses of each option in isolation. Combinations could then be considered based on outstanding deficiencies and interrelationships among distinct locations.

2.5.3 Description of Interchange Configurations Advanced

In support of a more detailed screening process, conceptual interchange design configurations were developed for the four interchange locations under evaluation. These conceptual designs were based on a combination of previous planning and

design efforts, traffic demand and distribution characteristics, safety considerations, and site-specific opportunities and constraints. All interchange configurations were developed with design guidelines that accommodate all types of traffic including large trucks. The general considerations for each interchange location and preliminary conceptual designs are described and presented in this section.

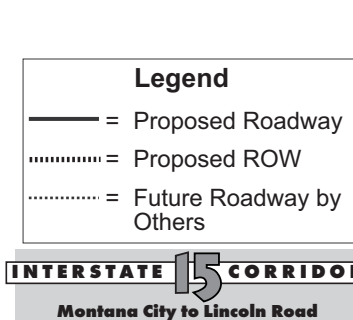
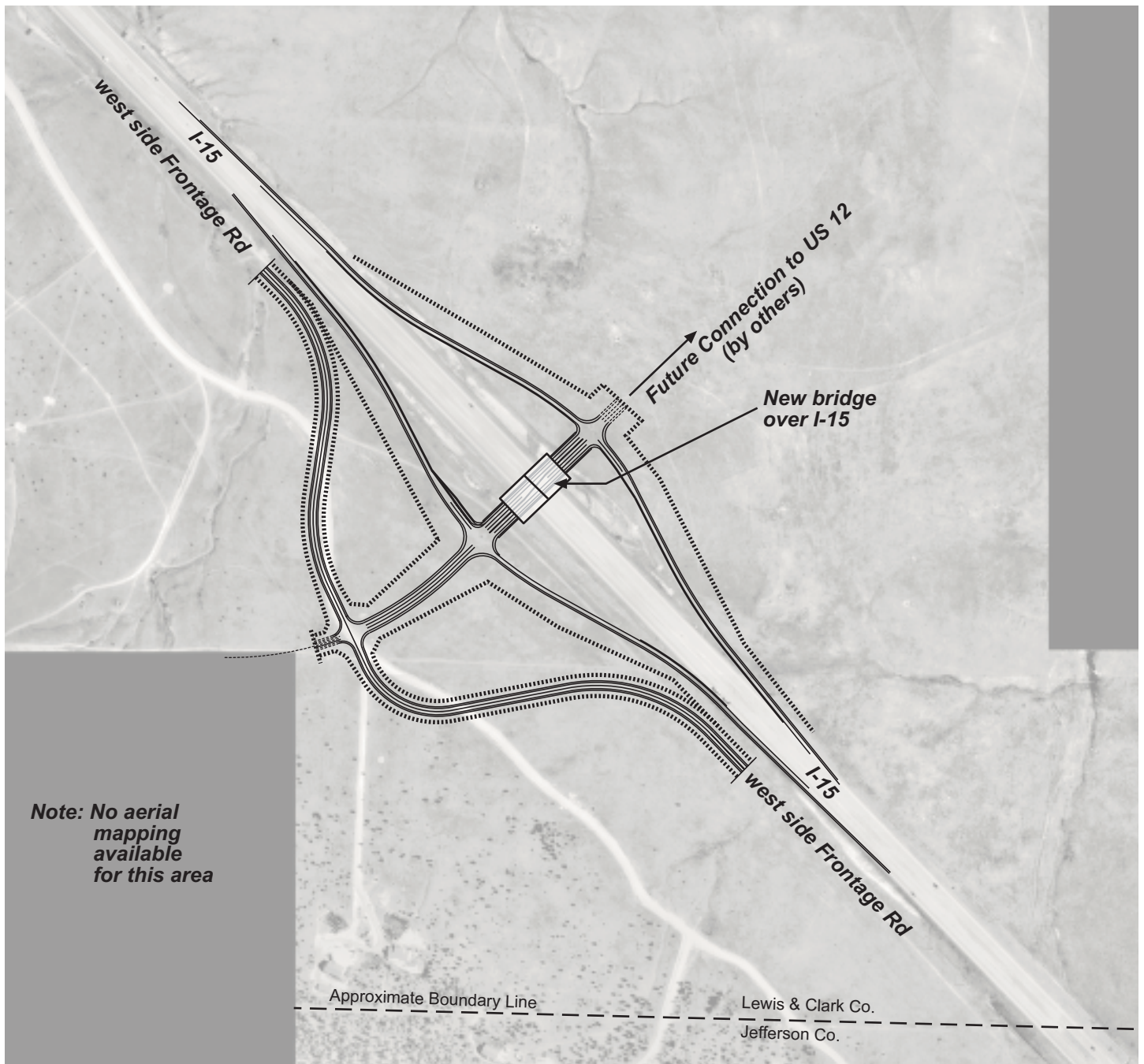
2.5.3.1 South Helena Interchange

The South Helena interchange would serve east-west traffic flow crossing I-15. The interchange would also provide an alternative I-15 access to existing and projected land use south of the Capitol interchange.

This interchange was developed with a traditional diamond layout; the most basic and cost-efficient interchange design. Different design configurations were prepared to see whether the interchange should provide access to Colonial Drive (via the west side Frontage Road) and Saddle Drive. Based on public and agency input, the connection to Saddle Drive was screened out due to potential residential impacts and strong neighborhood opposition. Future connections to the existing Saddle Drive are not precluded with the proposed South Helena interchange, but are not part of this study. The connection to the west side Frontage Road only was determined to be sufficient to serve the high traffic use areas such as the hospital.

The west side Frontage Road would be utilized as the primary connection to this new interchange. Existing right-of-way for the Frontage Road is 36 meters (120 feet) in Jefferson County, and 24 meters (80 feet) in Lewis & Clark County. In order to achieve standard intersection spacing for traffic operations, the west side Frontage Road would be realigned west around the interchange to maintain 180 meter (600 feet) spacing between intersections. Connecting the west side Frontage Road with Colonial Drive is an improvement option that received strong support from the Advisory Committee and the public. This connection is included as a supporting element discussed in Section 2.7.

The area east of I-15 at the proposed South Helena interchange location is in a designated Urban Area (see Figure 3-3), but is not currently zoned by the city or county. There is no existing roadway network on the east of I-15 in this area, however a minor roadway network exists just south of US 12. At the time of printing, the proposed development in this area has not been approved by the city but preliminary discussions are underway. New roads in conjunction with the proposed future development are anticipated and will be constructed by others. The proposed development on the east side is not dependent on the interchange, however the development may occur faster with an interchange in the area. **Figure 2-3** presents the conceptual South Helena interchange configuration.



South Helena Interchange Option

Figure 2-3

Carter-Burgess

2.5.3.2 Capitol Interchange

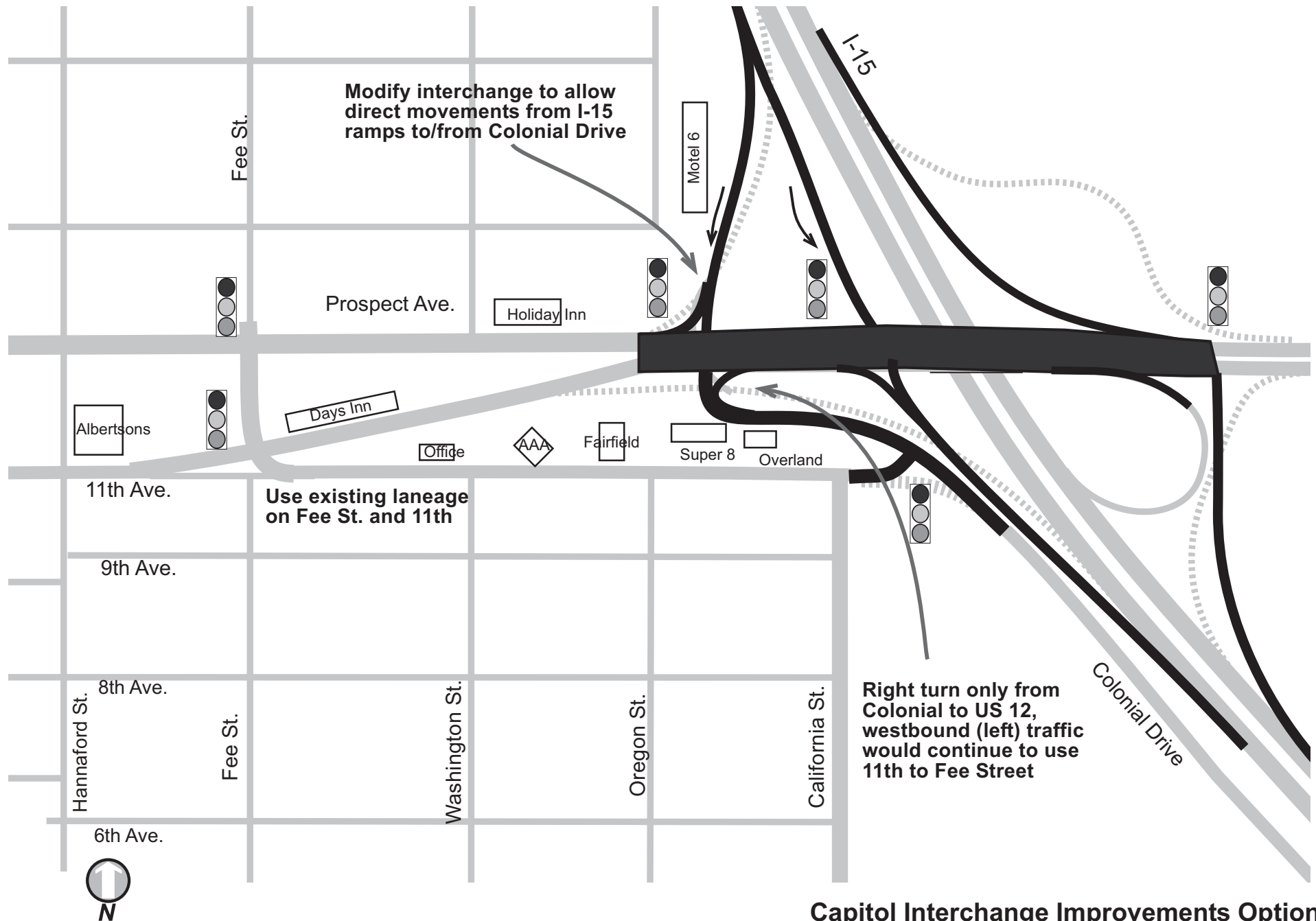
MDT has previously studied low-cost safety, traffic operations and pedestrian/bicycle improvements to the Capitol interchange that could be implemented without the expense of replacing the bridges over I-15. The low-cost improvements presented in the study included removal and replacement of the northbound I-15 off-ramps, widening and realignment of the westbound US 12 to southbound I-15 on-ramp, plus the addition of a pedestrian/bicycle bridge. These improvements were the basis for further assessment as part of this EIS.

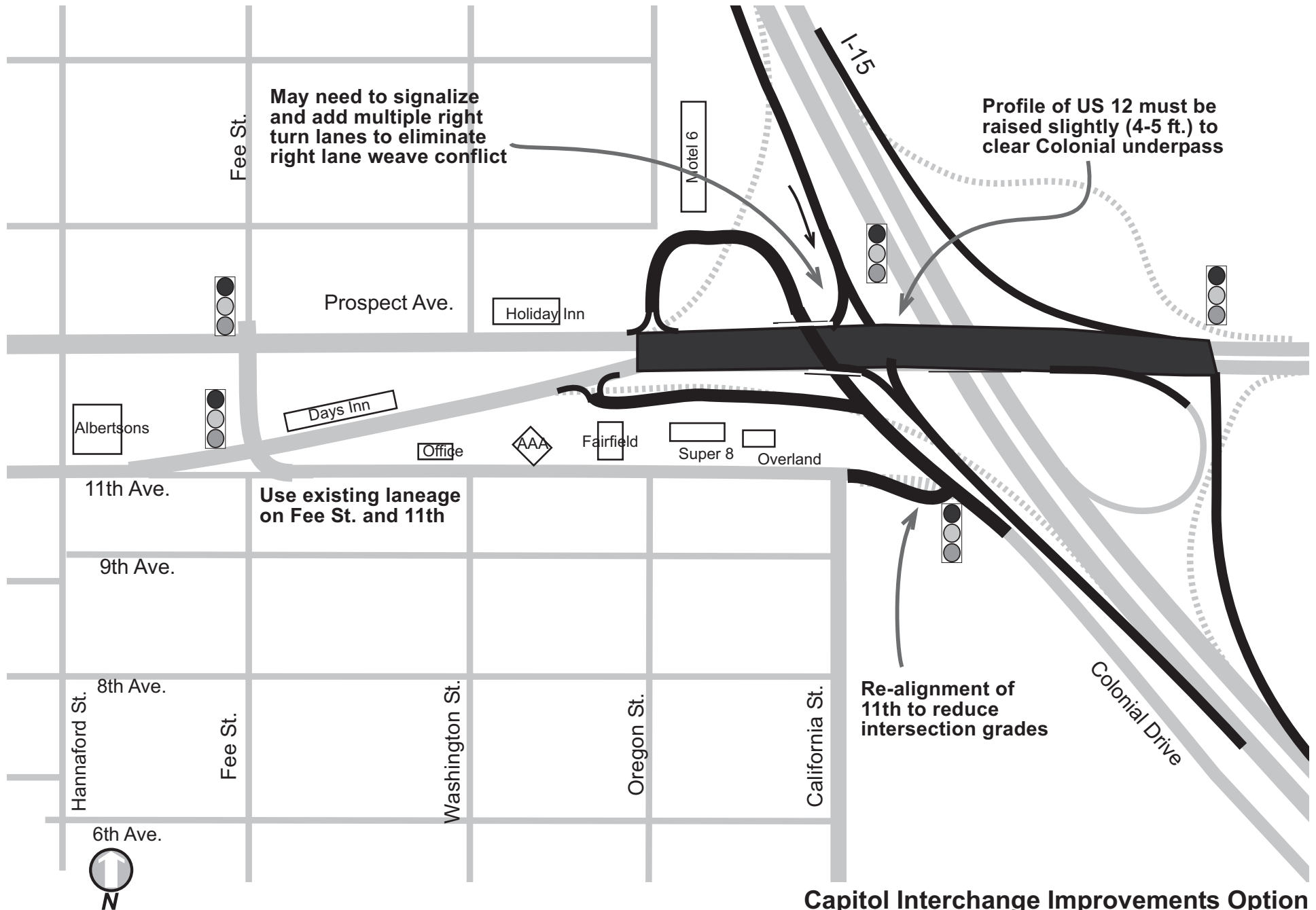
Four conceptual configurations for the Capitol interchange were developed based on an assessment of future travel demand and traffic patterns. Traffic movements related to Fee Street are a major component of the congestion in the interchange area for both the existing travel conditions and future forecasts. Even with capacity increases at the I-15 interchange, congestion will continue to worsen if the operations of the Fee Street intersections are not addressed. Approximately 25% to 30% of westbound peak period traffic on Prospect turns left at Fee Street towards Colonial Drive and the hospital area. The movement of traffic to and from Colonial Drive is a second major component of the congestion issues at the Capitol interchange.

The configurations developed for the Capitol interchange were intended to address three primary issues:

1. The capacity, safety, and needs of alternative modes of travel at the Capitol interchange (US 12 and I-15).
2. The high volume demand for the connection to the south via Fee Street and Colonial Drive.
3. Current and forecasted traffic demand at this interchange location.

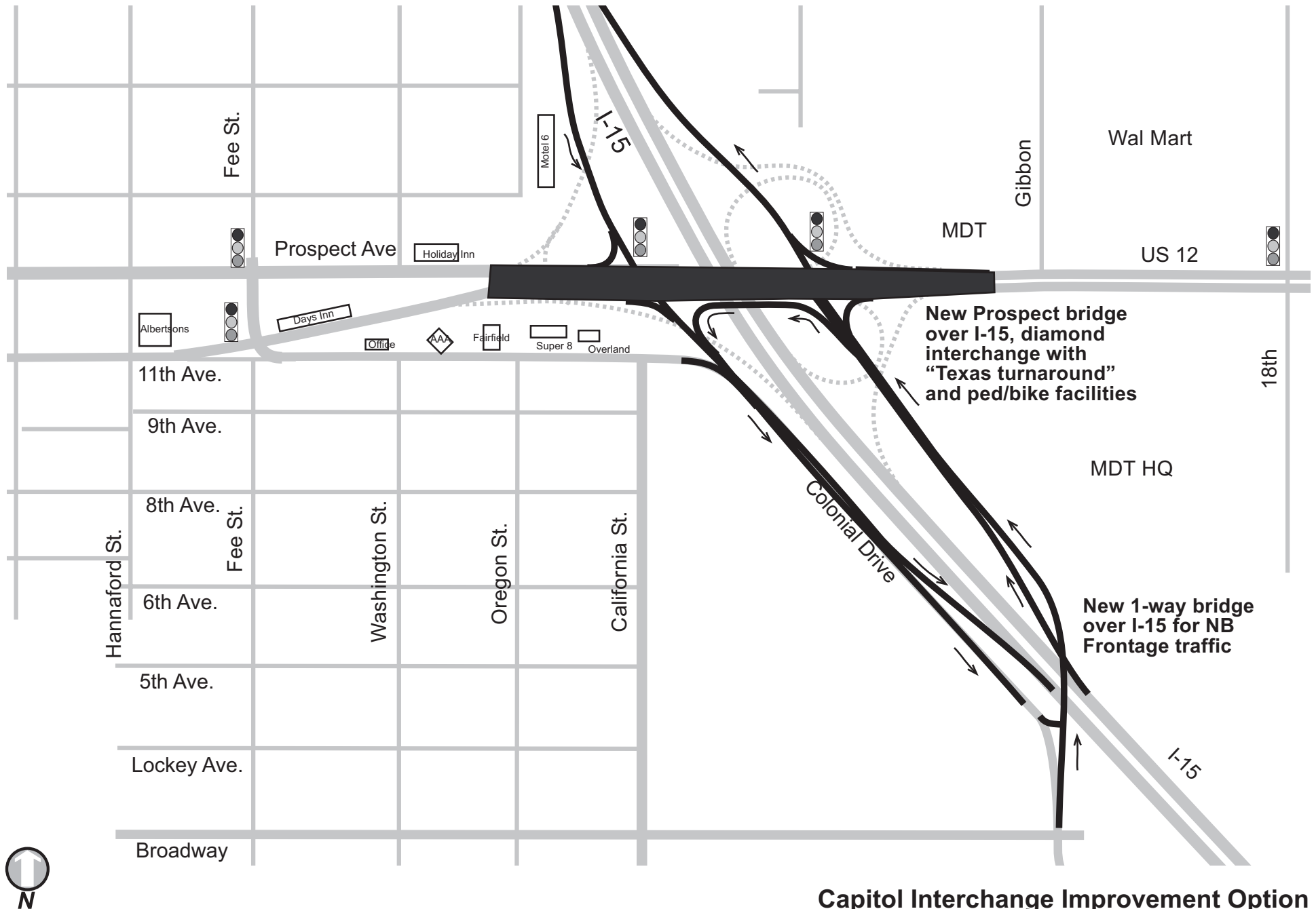
The initial Capitol interchange configurations were further developed into more than a dozen combinations of interchange configurations and Colonial Drive access scenarios. Less favorable combinations were eliminated based on design flaws, unacceptable impacts to private access, overly complex or confusing traffic movements, and excessively higher costs when compared to potential benefits. This screening process resulted in three feasible configurations to carry forward for further evaluation. Schematic layouts of these configurations are shown in **Figure 2-4**, **Figure 2-5** and **Figure 2-6**. A complete description of the configurations considered for the Capitol interchange is included in the *Alternatives Development Report*.





**Capitol Interchange Improvements Option
Colonial Drive Underpass Connection to US 12**

Figure 2-5



**Capitol Interchange Improvement Option
Diamond Interchange with One-Way Frontage Road**

Figure 2-6

2.5.3.3 Custer Avenue Interchange

The Custer Avenue interchange would provide access to existing and projected land use north of the Capitol and Cedar interchanges. The construction of a Custer Avenue interchange would also result in a capacity improvement to Custer Avenue between N. Montana Avenue and N. Washington Street, which would improve east-west traffic flow compared to the No-Action Alternative.

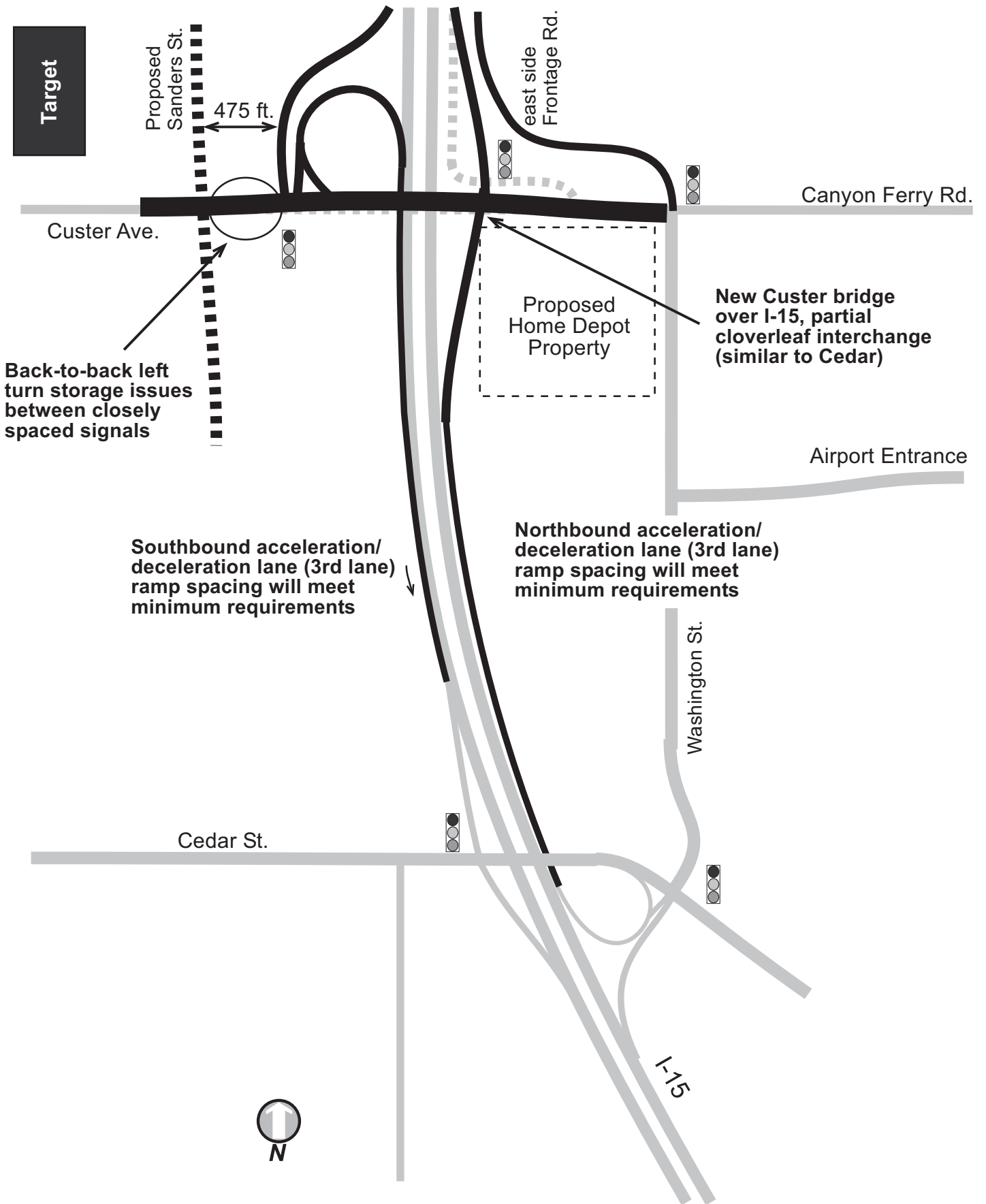
Due to the proximity of Custer Avenue to the existing Cedar Street interchange, careful consideration of highway design standards for interchange spacing was addressed. The spacing standards are intended to keep slower entering and exiting traffic from interfering with traffic moving at free-flow speeds on the highway. In locations where appropriate spacing cannot be achieved, alternative designs were considered to separate the ramp traffic from the mainline highway traffic. Six conceptual interchange options were developed for the Custer Avenue interchange. All of the configurations included either separated collector/distributor (C/D) roads or continuous I-15 acceleration/deceleration (A/D) lanes between the two locations. Some configurations included at-grade and grade-separated C/D concepts. The six configurations are shown in the *Alternatives Development Report*.

The screening of these configurations included eliminating those that used minimum standards or required traffic to go through a signal at one interchange to reach the next interchange. **Figure 2-7** and **Figure 2-8** show schematic concepts for the two configurations retained for detailed analysis. The configuration that was retained for full DEIS analysis includes auxiliary lanes between Custer Avenue and Cedar Street with a westbound to southbound loop ramp in the northwest quadrant at Custer Avenue (**Figure 2-7**). All of the configurations considered are fully described and illustrated in the *Alternatives Development Report*.

2.5.3.4 Forestvale Road Interchange

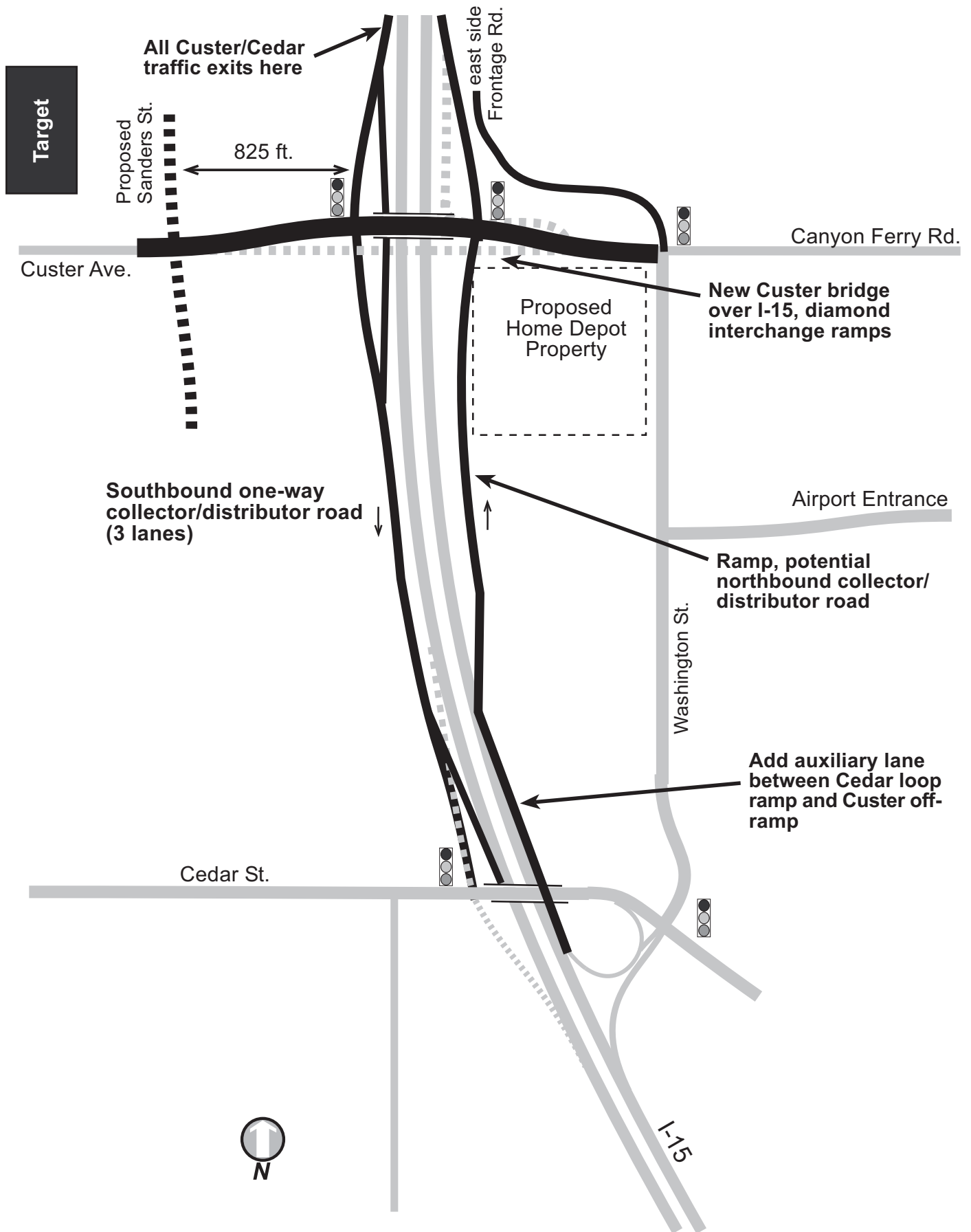
The Forestvale Road interchange would provide access to existing and projected land use north of the Capitol and Cedar interchanges. Construction of a Forestvale Road interchange would also result in a capacity improvement on Sierra Road and improved emergency response times in the north valley when compared to the No-Action Alternative.

The *Interstate 15 North Helena Valley EIS* completed in 1992 recommended the Forestvale interchange be developed as a traditional diamond interchange. The design included a Forestvale Road alignment shifted slightly south to reduce wetland impacts on the east. New 2025 traffic forecasts prepared for this EIS demonstrate the need for a five- or six-lane bridge at the Forestvale interchange if Forestvale is the only new interchange in the study area. This greater traffic demand is the result of land use forecasts which shift more new development north along I-15 if only a



**Custer Interchange Option
Partial Cloverleaf with A/D Lanes**

Figure 2-7



**Custer-Cedar Interchange Option
Split Diamond**

northern interchange is constructed (see 3.2.2.3 for more information on the land use forecasting). When a new southern interchange is combined with a Forestvale interchange in the traffic forecasts, the travel demand at Forestvale is reduced enough to be accommodated by the previously planned three-lane bridge. The 1992 design had three lanes, plus shoulders. The new traffic forecasts also indicate the need for additional turning lanes on approaching roads when compared to the 1992 design. Designs for both a five-lane Forestvale Road and three-lane Forestvale Road cross section were developed for the assessment. The five-lane design is slightly more constrained within the right-of-way due to the additional width of the road and additional turning lanes, but meets design standards. **Figure 2-9** illustrates the conceptual interchange concept with a three-lane Forestvale Road.

2.6 Detailed Screening of Options

As the range of options was narrowed for advancement in the screening process, the evaluation criteria became more detailed. Assessments were more specific and provided more quantifiable or tangible information for the decision making process. An abbreviated list of evaluation criteria was prepared that reflected the most important objectives expressed by the Advisory Committee and to meet NEPA and MEPA requirements. These evaluation criteria were more fully defined to assess characteristics that were most distinctive among the options still being considered. **Table 2-2** summarizes the detailed screening evaluation criteria.

Table 2-2
Detailed Screening Evaluation Criteria

| Category | Screening Criteria |
|---------------------------------------|---|
| Mobility and Access | <ul style="list-style-type: none"> • Change in traffic volume by major roadway link • Interchange traffic activity (I-15 ramp and crossing volumes) • Change in Vehicle Miles of Travel (VMT) and Vehicle Hours of Travel (VHT) by facility type • Emergency travel time changes • Truck route information • Ability to access airport, commercial, industrial, and residential areas |
| Safety | <ul style="list-style-type: none"> • Improvement of substandard designs |
| Environmental (potential impacts to:) | <ul style="list-style-type: none"> • Wetlands • Water quality • Surface and groundwater resources • Air quality |
| Community and Neighborhood | <ul style="list-style-type: none"> • Traffic growth due to shift in future land use • New major structures that could result in visual impacts • Connections to community and recreation resources • Estimated new ROW needs |

continued



| Legend | |
|--------|-------------------------------|
| | = Proposed Roadway |
| | = Irrigation Ditch Relocation |
| | = Proposed ROW |
| | = Irrigation Ditch Easement |
| | = End of Pavement |



Table 2-2 (continued)
Detailed Screening Evaluation Criteria

| Category | Screening Criteria |
|----------------------------------|--|
| Consistency with Local Plans | <ul style="list-style-type: none"> • Compliance with local transportation and comprehensive plans • Compliance with zoning and land use plans |
| Public Support | <ul style="list-style-type: none"> • Input received from public and neighborhood groups • Mitigation projects/techniques potentially available |
| Affordability and Implementation | <ul style="list-style-type: none"> • Conceptual cost estimates • Potential funding sources • Construction phasing options |
| Pedestrian/Bicycle Mobility | <ul style="list-style-type: none"> • Locations of pedestrian/bicycle connections |

2.6.1 Options Eliminated

The four options advanced from the “Preliminary Screening” effort were evaluated using the detailed screening measurements (summarized in **Table 2-2**) to provide further insight into the potential benefits and impacts of each option.

The Advisory Committee members were asked to identify which one of the four options performed most favorably in meeting the project goals and addressing purpose and need. In addition, AC members were asked if combinations of two and three interchanges demonstrated increased efficiency in meeting the transportation and mobility needs identified for the project.

Based on evaluation results and input from the Advisory Committee, none of the four options were eliminated during this step in the process. AC members requested that all four options be advanced as logical combinations of improvements, therefore maximizing the potential to address project purpose and need. However, using the information provided by the Advisory Committee, along with other public input and the traffic modeling performed for this EIS, a need for two interchanges north of Capitol could not be shown. All other combinations were advanced for further analysis.

2.6.2 Options Advanced

With input from the AC, all other possible improvement opportunities involving the four interchange options were evaluated. This included the four interchange locations as individual improvements, five combinations of two interchange locations, and two combinations of three interchange locations. The Capitol interchange is currently a hub of activity in the urban area and badly in need of reconstruction. Therefore, the Capitol interchange was included in all options considered. Major

Options for improvement to meet corridor needs were identified in four areas; 1) reconstruction of the Capitol interchange, 2) a new interchange south of Capitol, 3) a new interchange at Custer Avenue, and 4) a new interchange at Forestvale Road. Various alternatives such as reconstruction of the Capitol interchange with an additional interchange at Custer Avenue or Forestvale Road (north of Capitol) were considered as was combining reconstruction of the Capitol interchange with a new interchange to the south.

In the final analysis, two combinations were identified that best meet purpose and need, address each of the project goals and are responsive to the extensive public input received on the project. These combinations, which are described in Section 2.8, reflect the following community values and engineering considerations:

- ▶ The Capitol interchange as a stand-alone improvement does very little to meet purpose and need and fails to address many of the corridor's needs identified throughout the project scoping process. However, the Capitol interchange has been shown to be a key component of the overall I-15 operation. Therefore, Capitol interchange improvements, if provided, must be done in combination with one or more other improvements.
- ▶ Any of the three new interchange locations, as stand-alone projects, do very little to meet purpose and need and public expectations. In addition, any new interchange by itself results in worse congestion at the already heavily congested Capitol interchange.
- ▶ Input from the general public and from the Advisory Committee showed strong support for providing transportation improvements both to the north and south of the Capitol interchange. Local and regional plans also strongly support new I-15 access to the north and south.
- ▶ Nothing in the screening of improvement options has indicated a need at this time for two new interchanges north of Capitol. Adding two new interchanges north of Capitol without providing additional improvements fails to meet the many corridor needs to the south of Capitol. Since the needs south of Capitol are not met, it was determined that two new interchanges north of Capitol would not be consistent with local plans.
- ▶ Combinations which provide improvements to the Capitol interchange along with one new interchange to the north and one to the south best meet purpose and need, the project goals and evaluation criteria, city and county plans, and the desires of the general public.

2.7 Detailed Screening of Supporting Elements

The Advisory Committee members also reviewed each of the supporting elements carried forward through the preliminary screening process. **Table 2-3** summarizes the key issues identified in the screening of supporting elements and the primary reasoning for supporting element advancement or elimination. These are not listed in a prioritized order. Supporting elements were either combined with other supporting elements, included within the description of the major options advanced or were eliminated.

Table 2-3
Screening of Supporting Elements

| No. | Supporting Element Definition | Key Screening Results | Advance Supporting Element? |
|-----|--|---|---|
| 1 | Lincoln interchange improvements | <ul style="list-style-type: none"> Addresses existing substandard design. Consistent with area plans. Needed to address future travel demand. | <ul style="list-style-type: none"> Advanced to accommodate future travel demand and existing safety concerns. |
| 2 | Montana City interchange improvements | <ul style="list-style-type: none"> Supports <i>Jefferson County Comprehensive Plan</i>. Needed to address future travel demand. | <ul style="list-style-type: none"> Advanced to accommodate future travel demand. |
| 3 | I-15 auxiliary lanes | <ul style="list-style-type: none"> Addresses existing substandard design. High public support for reducing congestion on I-15. Needed to address future travel demand. Necessary to maintain LOS B on the interstate. | <ul style="list-style-type: none"> Advanced as part of Capitol interchange description. * |
| 4 | Connect/pave west side Frontage Road | <ul style="list-style-type: none"> Serves hospital area and areas of growth identified in several area plans. Supports city and counties plans. Strong public and AC support. | <ul style="list-style-type: none"> Advanced to serve future land use and provide improved access to hospital area. |
| 5 | Capitol interchange bridge replacement | <ul style="list-style-type: none"> Existing Capitol interchange bridge cannot accommodate future travel demands. | <ul style="list-style-type: none"> Advanced as part of Capitol interchange description. |
| 6 | Upgrade I-15 railroad crossings | <ul style="list-style-type: none"> I-15 bridge structures functionally obsolete. I-15 bridge structures cannot accommodate future travel demands. | <ul style="list-style-type: none"> Advanced as part of Capitol interchange description. |

continued

Table 2-3 (continued)
Screening of Supporting Elements

| No. | Supporting Element Definition | Key Screening Results | Advance Supporting Element? |
|-----|---|--|--|
| 7 | Spot safety improvements | <ul style="list-style-type: none"> All safety improvements identified addressed in other supporting elements or major options. | <ul style="list-style-type: none"> All identified improvements advanced as part of other supporting elements or major options. |
| 8 | Improve Boulder Avenue underpass | <ul style="list-style-type: none"> Little effect on I-15 or major crossings expected due to improvements. | <ul style="list-style-type: none"> Not advanced. |
| 9 | Pedestrian/bicycle improvements | <ul style="list-style-type: none"> Addresses pedestrian/bicycle travel in purpose and need. Has the potential to influence overall travel demand within Helena region. Strong public support. | <ul style="list-style-type: none"> Advanced as part of each new or improved interchange and at the Broadway underpass location. |
| 10 | Transit improvements | <ul style="list-style-type: none"> Has the potential to influence overall travel demand within Helena region. Limited public use of transit. | <ul style="list-style-type: none"> Not advanced but supported and compatible with all improvements. |
| 11 | Transportation Demand Management (TDM) improvements | <ul style="list-style-type: none"> Has the potential to influence overall travel demand within Helena region. Limited public use of existing TDM options. | <ul style="list-style-type: none"> Not advanced but supported and compatible with all improvements. |
| 12 | East/west truck bypass | <ul style="list-style-type: none"> No change in through truck volumes expected due to improvements. Not expected to affect operations on I-15 or major cross streets. Strong public support of bypass option. | <ul style="list-style-type: none"> Not advanced. |
| 13 | Forestvale frontage roads | <ul style="list-style-type: none"> Supplement to interchange at Forestvale. Existing connections already provided on both sides of I-15. No identified access needs along proposed frontage road. Very little public support identified. | <ul style="list-style-type: none"> Not advanced. |

continued

Table 2-3 (continued)
Screening of Supporting Elements

| No. | Supporting Element Definition | Key Screening Results | Advance Supporting Element? |
|-----|--|---|--|
| 14 | Grade separate N. Montana Avenue at railroad | <ul style="list-style-type: none"> • Supplement to N. Montana Avenue improvements. • N. Montana Avenue not advanced as major option. | <ul style="list-style-type: none"> • Not advanced. |
| 15 | Broadway neighborhood traffic mitigation | <ul style="list-style-type: none"> • Supplement to underpass or interchange at Broadway. • Broadway underpass or interchange not advanced as major option (for vehicles). | <ul style="list-style-type: none"> • Not advanced (separate Broadway pedestrian/ bicycle underpass advanced). |
| 16 | Five-lane Cedar Street (I-15 to N. Montana Avenue) | <ul style="list-style-type: none"> • Supplement to interchange at Custer. • Results in 50% increase in traffic using Cedar Street. • High public support for improving Cedar Street/I-15 area. | <ul style="list-style-type: none"> • Advanced to address future travel demands. |

* Auxiliary lanes initially proposed to support the Capitol interchange improvements were later expanded to support either a new northern interchange (Custer or Forestvale) in order to maintain LOS B traffic flow on I-15.

The screening and evaluation criteria used for the supporting elements were consistent with the detailed screening of major options described in Section 2.6. The criteria shown in **Table 2-2** also were used to evaluate the benefits and impacts of each supporting element.

2.7.1 Supporting Elements Eliminated

Seven supporting elements were eliminated from further consideration in the EIS assessment.

- **Boulder Avenue Underpass.** This supporting element was identified to provide improved east-west connectivity across I-15. It was screened out because it does not directly provide improved I-15 mobility and provides limited regional mobility. Additionally, the Helena traffic model used for this EIS shows very low traffic demand of this corridor with the proposed improvement and the corridor is not anticipated or planned as a major bike and pedestrian facility. However, an underpass at Boulder Avenue does provide local connectivity across the I-15 Corridor and has received local planning interest. The underpass currently exists and serves as a minor unpaved public roadway with less-than-desirable design standards. The Boulder underpass is recommended for other local or regional planning considerations, and any reconstruction of the I-15 bridges over Boulder

Avenue should allow for a roadway and pedestrian facilities to be improved in the corridor.

- ▶ **Transit Improvements.** This supporting element was identified to provide other transportation choices for taking trips in the Helena area. Specific transit elements included identifying appropriate transit routes and potential park-n-ride locations.

This element was screened out for further analysis due to the limited use and availability of existing transit in the Helena area and the absence of strong public support. Transit improvements were not identified as improvement options that would provide significant travel reduction on either I-15 or streets providing regional travel across I-15. Regional transit needs and objectives are identified in other local and regional transportation planning efforts including the *Helena Transit Development Plan*. This supporting element is recommended for other local or regional consideration. The alternatives evaluated in this document are designed to be compatible with those plans.

- ▶ **Transportation Demand Management (TDM).** This supporting element was identified to provide other mechanisms for reducing vehicle trips in the Helena area. Specific TDM activities identified and considered included development of local Transportation Management Associations (TMAs); flex-time work schedules; carpools; vanpools; and pedestrian and bicycle improvements (see Section 4.11.2 for a more detailed discussion).

With the exception of pedestrian and bicycle improvements, which are included in each interchange design, this supporting element was screened out because there is currently minimal participation in TDM programs in the Helena area and there was minimal public support of TDM elements for this project expressed in comments received from the public, including the Public Opinion Survey. Employer-specific TDM strategies are already being used in Helena and are integral to future local and regional planning efforts. This EIS recognizes employer-specific TDM strategies and proposed improvements are designed to be compatible with these strategies.

- ▶ **East/west truck bypass (truck route improvements between the junction of I-15 and Cedar Street and the intersection of US 12 and Carter Drive).** This supporting element was identified during the alternatives development process as an east-west truck bypass route using N. Main, Cedar interchange, Airport Road, and Carter Drive. An origin/destination study completed for this EIS showed a low overall percentage of through-truck activity. The supporting element was modified during the screening process to include a truck route enhancement between the junction of I-15 and Cedar Street and the intersection of US 12 and Carter Drive.

While this supporting element had strong public and Advisory Committee support, it was screened out because it does not directly provide improved I-15 mobility and is not an integral part of meeting the purpose and need for the project. Truck travel for west to north and south to east movements is directly served by improvements to the Capitol interchange. Through-truck demand for this facility does not warrant other improvements. Implementation of either of the two build alternatives will include improvements to the Capitol interchange. This improvement will reduce congestion and improve mobility for all local trips, including truck trips, since the route serves an industrial area. This supporting element is recommended for other local or regional consideration.

- ▶ **Forestvale Frontage Roads.** This supporting element involved extending the east side Frontage Road from Masonic Home Road to Lincoln Road. It was identified to provide an alternate north-south route along I-15 south of Lincoln Road.

This element was screened out because Masonic Home Road and Glass Drive already accommodate the traffic that would be served by a new east side Frontage Road connection. Both have adequate capacity to meet current and future demand. There was very little identified support for this option expressed by the public.

A new west side Frontage Road from Sierra Road to Forestvale Road was also identified. This element was screened out because connection between the two roads was already accommodated by N. Montana Avenue and the existing east side Frontage Road. Additionally, there was no identified existing or future land use requiring local access that would be provided by this new Frontage Road.

- ▶ **Grade Separation of Railroad Crossing at N. Montana Avenue.** This supporting element was eliminated primarily because it did not relate to the project's purpose and need. It is also outside of the immediate I-15 Corridor study area. However, this improvement is recommended for consideration as part of local and regional transportation planning efforts.
- ▶ **Broadway Neighborhood Traffic Mitigation.** None of the Broadway underpass options serving general traffic were advanced, so additional neighborhood traffic mitigation is not necessary as a supporting element.

2.7.2 Supporting Elements Advanced

The following five supporting elements were identified for inclusion with each of the major options advanced. A complete description of each of these is provided in Sections 2.4.2 and 2.4.3.

- ▶ Lincoln Road interchange improvements
- ▶ Montana City interchange improvements
- ▶ Connect and pave west side Frontage Road between Montana City and Colonial Drive
- ▶ Widen Cedar Street to five lanes from I-15 to N. Montana Avenue
- ▶ Broadway Underpass for pedestrian and bicycle use only—A structure is proposed to provide pedestrian and bicycle access similar to underpasses being built within other Montana communities. The recommended size and type of structure will be determined during final design. The structure will be sized to restrict vehicular traffic, but allow for adequate pedestrian and bicycle access. The Broadway pedestrian/bicycle underpass would include a trail that connects to the cul-de-sac on Broadway west of I-15. On the east side of I-15, the underpass would include a paved path connecting to 18th Street adjacent to the MDT facility. Local planning has indicated that the street network east of I-15 could be expanded with proposed development, so the future pedestrian/bicycle trail connections can be modified based on that planning.

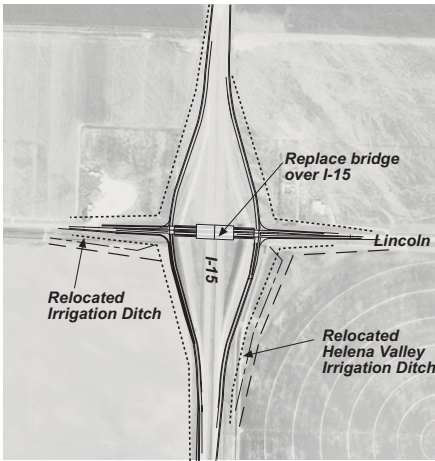
2.8 Alternatives Advanced for DEIS Assessment

The DEIS Alternatives and the supporting elements were developed following the evaluation process described in the preceding sections, and with extensive input from the general public, participating agencies, and the Advisory Committee. As described in Section 2.6.2, the detailed screening of the four major options did not result in elimination of any. Results indicated that each option had the potential to efficiently address the project goals and meet purpose and need. Based on the broad needs that exist throughout the corridor, it was determined that the DEIS evaluation should assess the effectiveness and impacts of combining the four major improvement options with the supporting elements identified in Section 2.7.2 to maximize overall effectiveness.

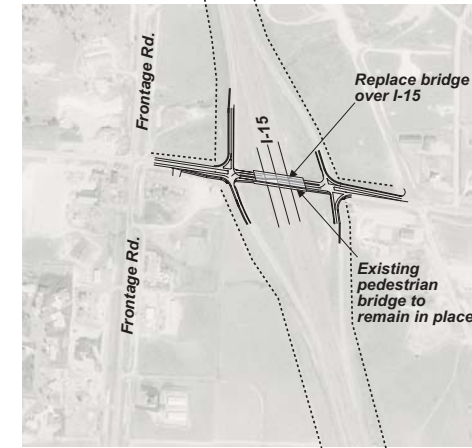
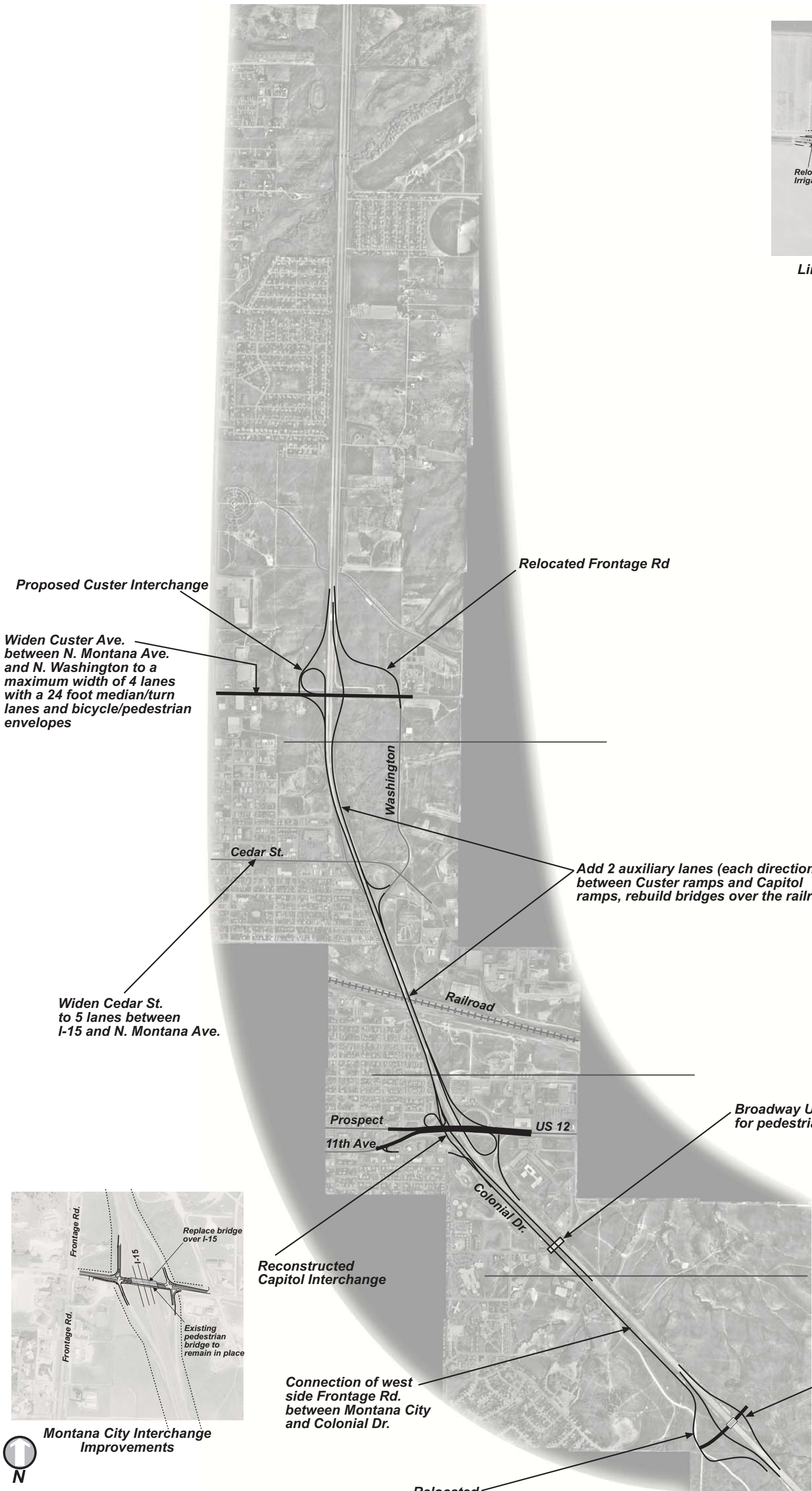
The two build alternatives that best meet purpose and need that were analyzed in the DEIS are:

- ▶ New interchanges at South Helena and Custer Avenue, and Capitol interchange improvements
- ▶ New interchanges at South Helena and Forestvale Road, and Capitol interchange improvements.

Descriptions of the proposed alternatives are provided below. The two build alternatives are illustrated in **Figure 2-10** and **Figure 2-11**. All the supporting elements advanced are included with each build alternative.



Lincoln Road Interchange Improvements

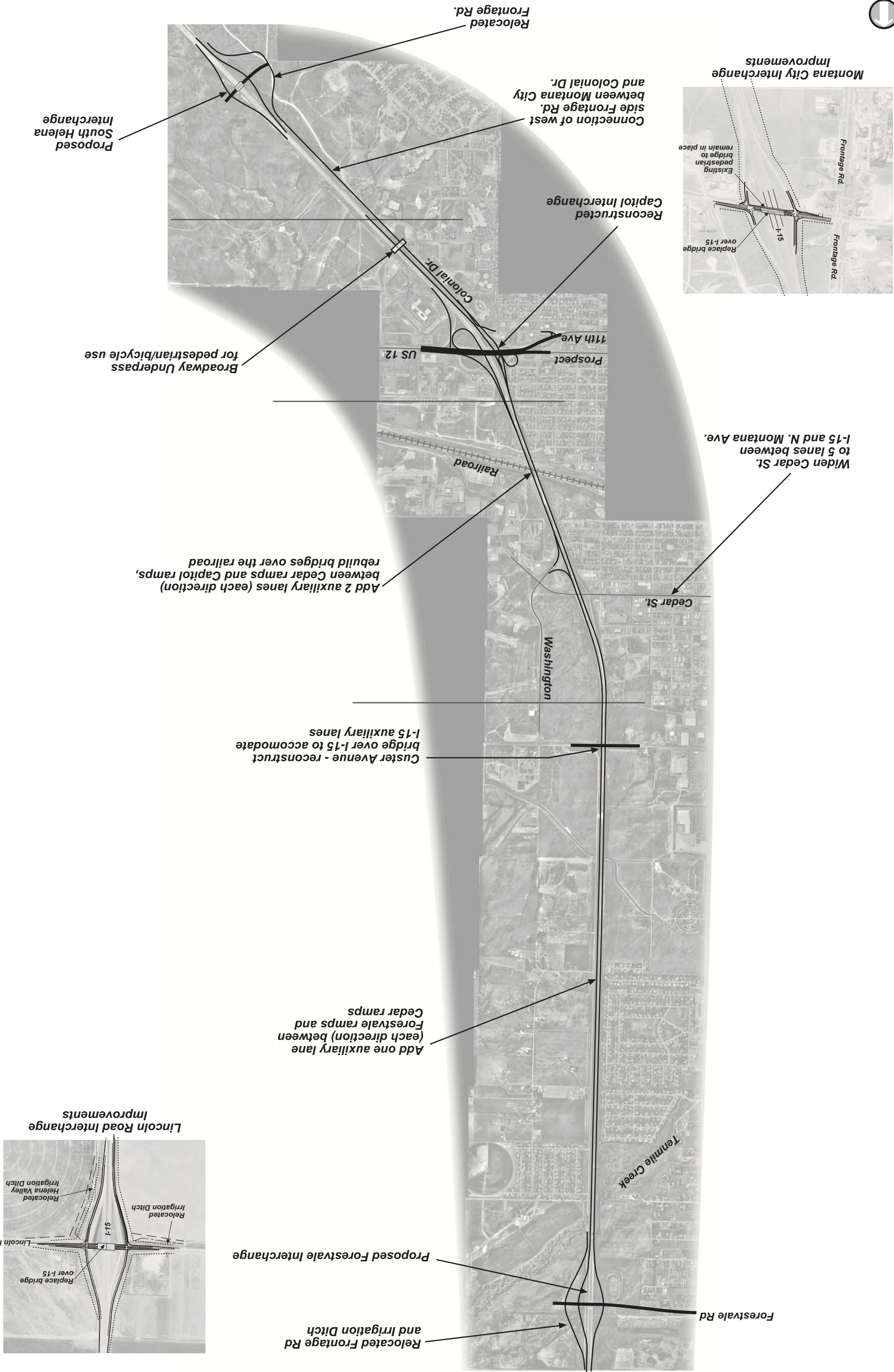


Montana City Interchange Improvements





Alternative 2
Proposed Interchange Configurations



2.8.1 No-Action Alternative

The No-Action Alternative was fully assessed and used as a “baseline” against which the two build alternatives were evaluated. In addition, the No-Action Alternative assumed completion of those transportation, development and infrastructure projects that are already in progress, or are programmed by MDT, Lewis & Clark County, Jefferson County, or the city of Helena. These include the projects listed in **Table 5-6, Table 5-7, and Table 5-8.**

2.8.2 Alternative 1

Alternative 1 is a composite of transportation improvements including a new south Helena interchange and a new northern interchange at Custer Avenue. This alternative is designed to optimize corridor transportation improvements without incurring undesirable environmental impacts. This alternative is enhanced by including five supporting elements to complete the proposed improvements under Alternative 1. The major components of Alternative 1 are:

- ▶ New interchange at South Helena (approximately 2.7 kilometers (1.6 miles) south of the Capitol interchange)
- ▶ Interchange improvements at Capitol
- ▶ New interchange at Custer Avenue
 - ◇ Conceptual design for widening of Custer Avenue between N. Montana Avenue and N. Washington Street includes a maximum width of four 3.6-meter (12-foot) through lanes with a 3.6-meter to 7.3-meter (12-foot to 24-foot) median/turn lanes plus the pedestrian/bicycle envelopes as described in Section 4.8.2. Final design will determine the exact configuration.
 - ◇ Construction of two auxiliary lanes (each direction) on I-15 between Custer Avenue and the Capitol interchange plus appropriate transitions for adding and dropping the auxiliary lanes (to be determined in final design).
 - ◇ Minor realignment of east side Frontage Road at Custer Avenue
 - ◇ Replacement of the twin I-15 bridges over the Montana Rail Link railroad
- ▶ Supporting elements (described in Section 2.8.4):
 - ◇ Lincoln Road interchange improvements
 - ◇ Montana City interchange improvements
 - ◇ Connect west side Frontage Road between Montana City and Colonial Drive
 - ◇ Widen Cedar Street to five 3.6-meter (12-foot) lanes from I-15 to N. Montana Avenue

- ◇ Broadway underpass for pedestrian and bicycle use

Each of these transportation improvements is described in the following sections. The supporting elements, which are common to both alternatives, are described in Section 2.8.4.

2.8.2.1 South Helena Interchange

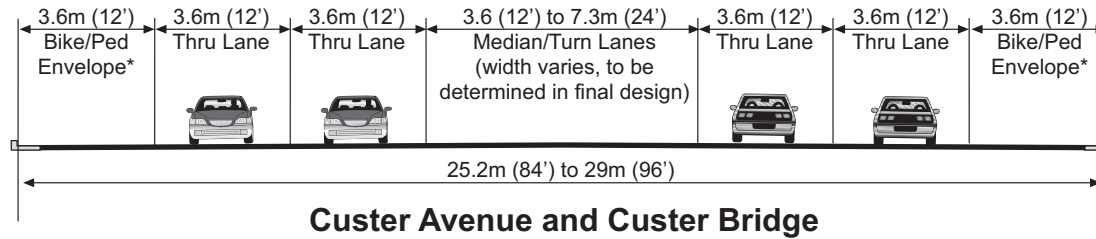
This improvement is a new interchange with I-15 designed primarily to address access, mobility, emergency services, and regional planning needs in northern Jefferson County and southern Lewis & Clark County. The proposed new interchange is located approximately 2.7 kilometers (1.6 miles) south of the Capitol interchange (see **Figure 2-3**).

This new interchange is proposed to be a traditional diamond layout with standard northbound and southbound on- and off-ramps. At the present time, no east-west roadway exists or is proposed as part of this project. New roads in conjunction with proposed future development are anticipated and will be constructed by others. The new interchange crossover road would connect on the west to the existing west side Frontage Road which would be shifted approximately 229 meters (750 feet) further west to provide adequate spacing between the interchange ramps and the frontage road intersection. On the east, the crossover road would extend just beyond the interchange ramps to accommodate future extension through the eastside development currently under study. Future development of the lands immediately east and north of the interchange location appears eminent but has yet to receive formal approval from the city of Helena and Lewis & Clark County.

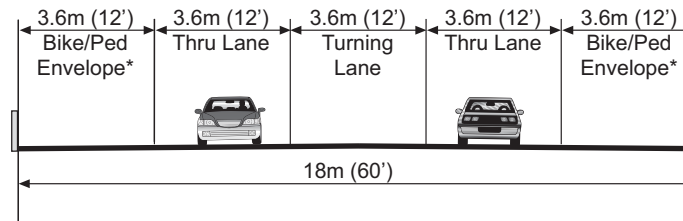
The new bridge crossing over I-15 would be approximately 18 meters (60 feet) wide to accommodate three travel lanes and a 3.6-meter (12-foot) envelope on each side for pedestrians and bicyclists (see Section 4.8.2 for more discussion of potential pedestrian and bicycle amenities). The center travel lane would be striped for use as a left turn lane (see **Figure 2-12** for typical cross section). Auxiliary lanes on I-15 are not required in association with the South Helena interchange.

2.8.2.2 Capitol Interchange Improvements

This improvement provides for the reconstruction of the existing Capitol interchange to address safety, capacity, mobility, and emergency services needs. The Capitol interchange is the single most congested location in the entire corridor and is the most frequently identified problem area needing to be corrected. The new interchange bridge would carry three through travel lanes in each direction and a 3.6-meter (12-foot) to 9-meter (30-foot) median to accommodate one or two left turn movements and a raised median. Pedestrian and bicycle facilities would be as described in Section 4.8.2 (see **Figure 2-13** for typical cross section).

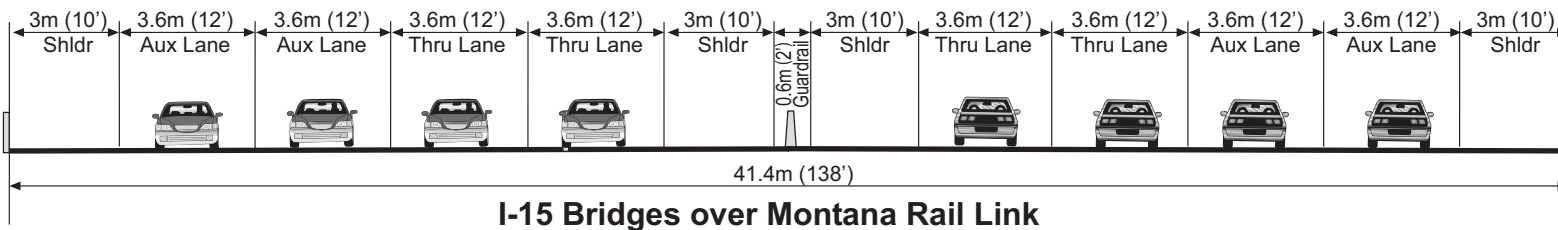
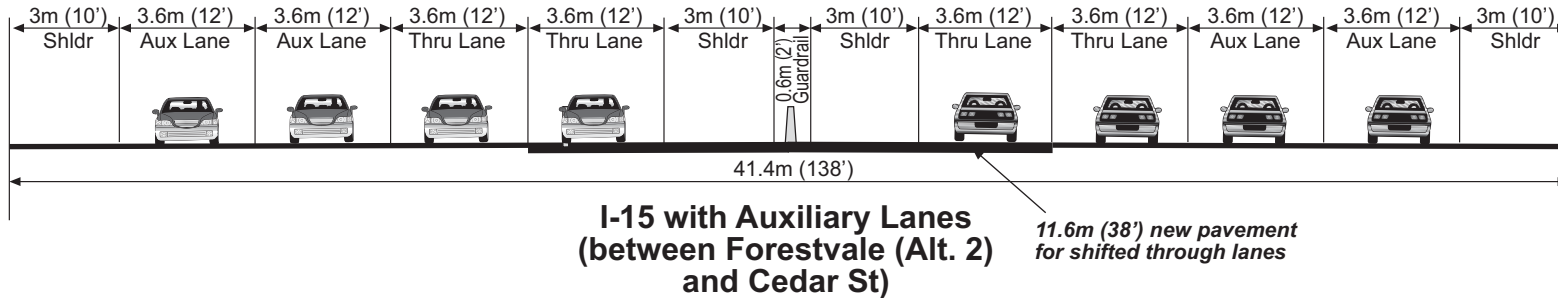
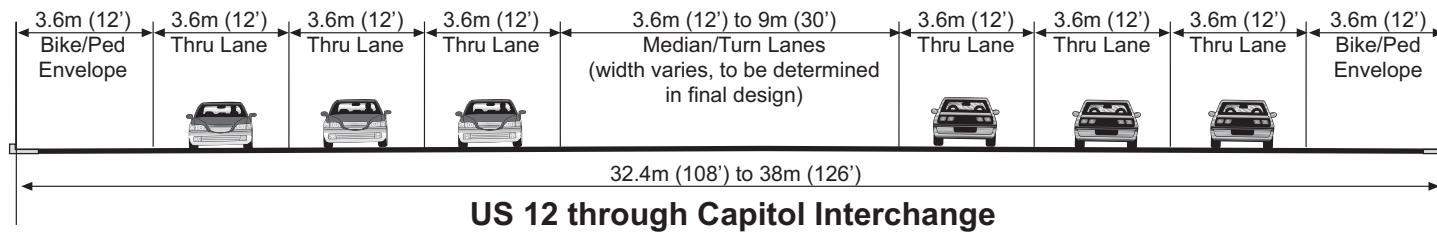


* Bike/ped envelope options described in Section 4.8.2



**New or Reconstructed
Interchange Bridges at:
South Helena
Lincoln Road
Forestvale Road (Alternative 2 only)
Montana City**

* Bike/ped envelope options described in Section 4.8.2



All four ramps serving the interchange would be modified to safely accommodate future traffic volumes. In the northwest quadrant, a new underpass of US 12 is proposed to provide southbound I-15 traffic direct access to Colonial Drive.

Westbound traffic on US 12 would access Colonial Drive via a new loop ramp in the northwest quadrant which would connect to the US 12 underpass. Use of the underpass would remove all of this traffic from the congested US 12/Fee Street intersection.

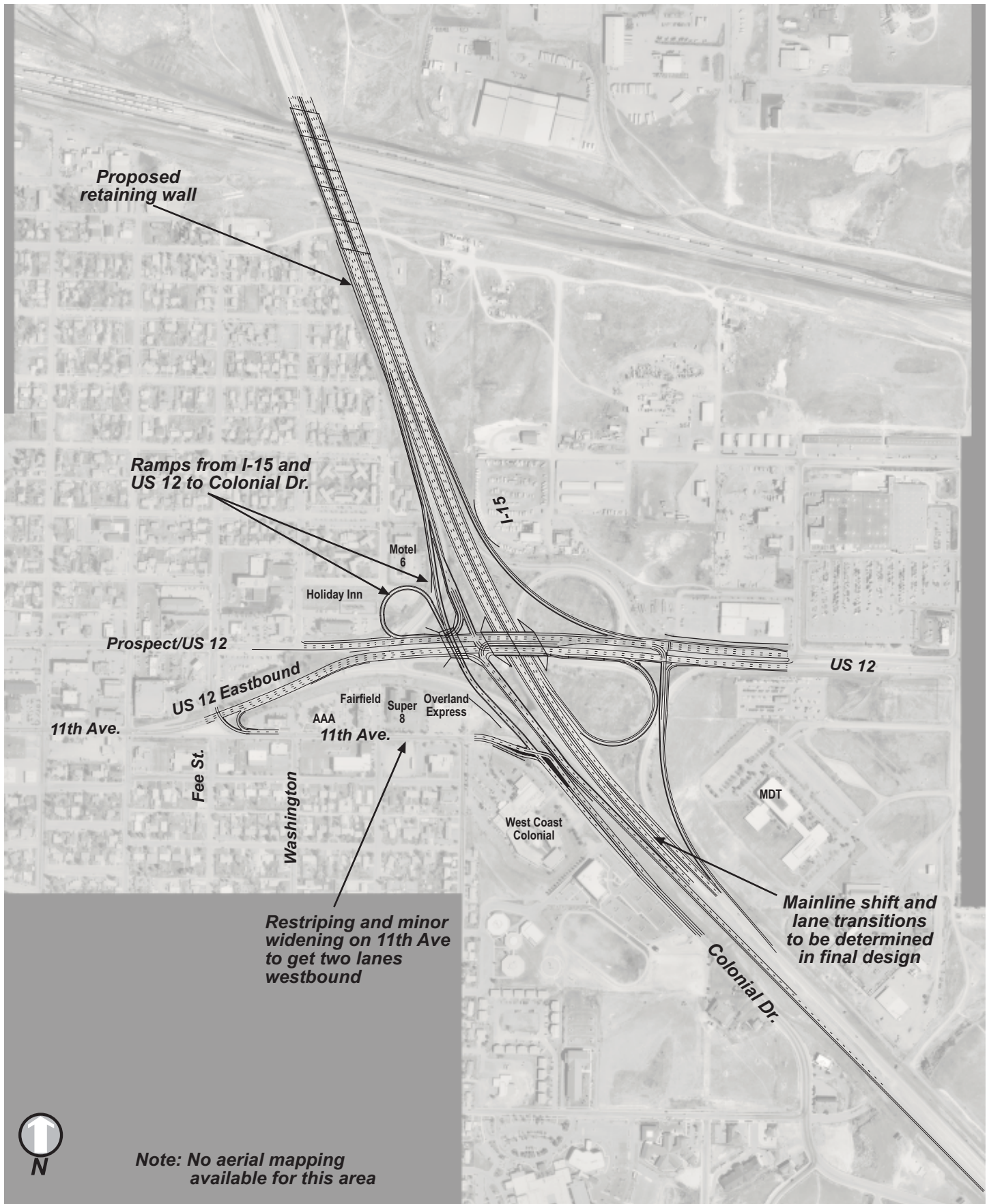
Northbound traffic from Colonial Drive would continue to use 11th Avenue and Fee Street to reach the Capitol interchange. 11th Avenue would require re-striping and minor widening between California and Fee Street to include two westbound lanes to accommodate increased traffic volumes. An unrestricted right-turn would be constructed to allow westbound 11th Avenue traffic to turn east on US 12 to get to the Capitol interchange. Colonial Drive would require reconstruction from the US 12 underpass connection south for approximately 427 meters (1,400 feet) to provide a continuous roadway. The loop ramp on the east side of the existing interchange will be modified as shown in **Figure 2-14**.

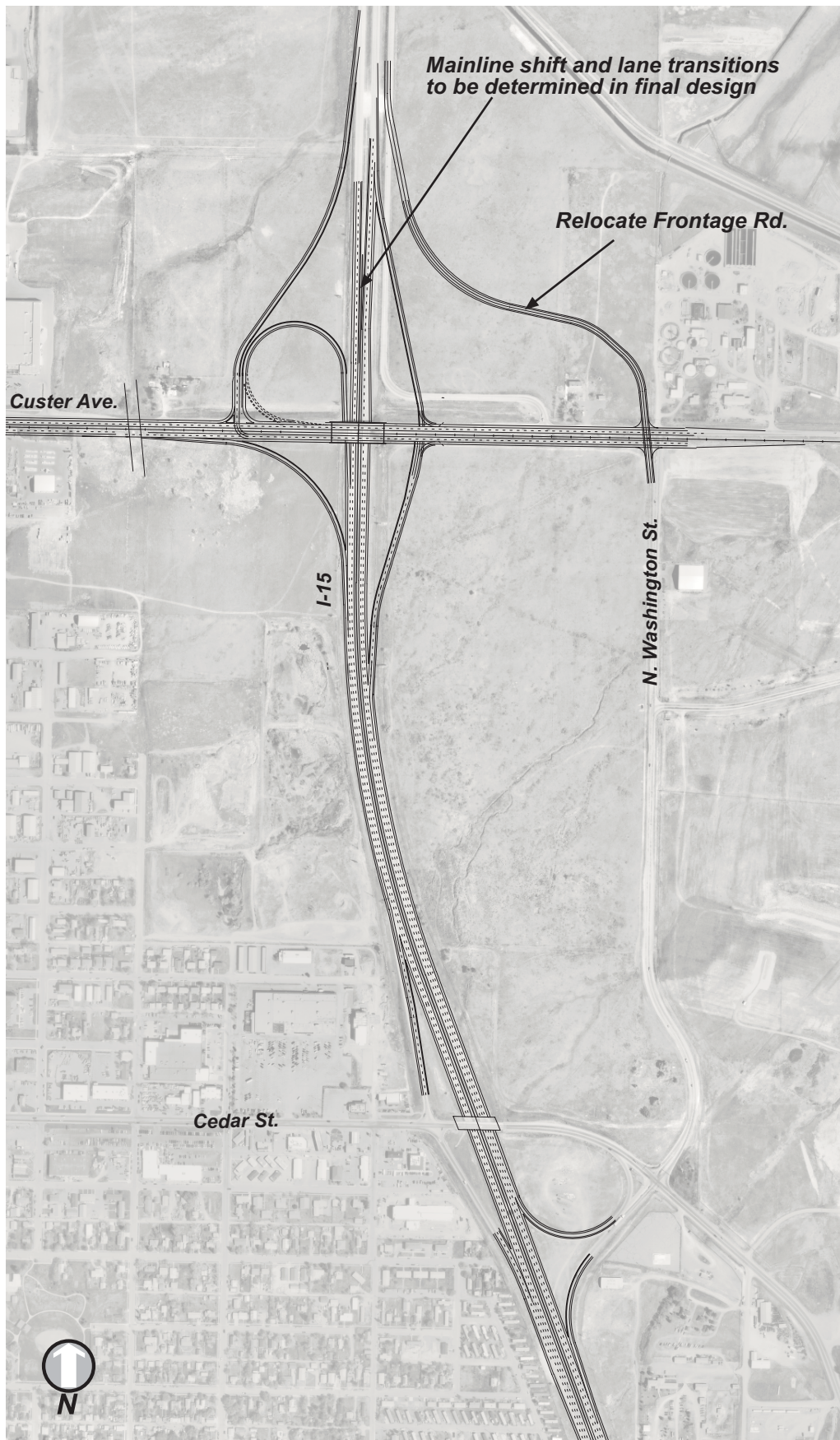
Retaining walls are anticipated in the northwest and southwest quadrants to minimize right-of-way acquisition requirements. No business or residential structures are anticipated to be relocated with the Capitol interchange improvements. Some undeveloped portions of parcels may be acquired for right-of-way.

2.8.2.3 Custer Interchange

This improvement is a new interchange at the existing Custer Avenue overpass location and Custer Avenue widening. The new interchange would primarily address access, capacity, mobility, emergency services, and local and regional planning needs in Helena and Lewis & Clark County. The proposed new interchange would be a partial cloverleaf layout (see **Figure 2-15**).

The new Custer Avenue bridge would carry a maximum width of two travel lanes in each direction and a center lane to accommodate left turns. A 3.6-meter (12-foot) envelope for pedestrians and bicyclists would be constructed on both sides of the bridge and along Custer Avenue (see Section 4.8.2 for more discussion of potential pedestrian and bicycle amenities). Custer Avenue would be widened to a maximum width of four 3.6-meter (12-foot) through lanes with a 3.6-meter to 7.3-meter (12-foot to 24-foot) median/turn lanes plus the pedestrian/bicycle envelopes as described in Section 4.8.2 (see **Figure 2-12** for typical cross sections). Final design will determine the exact configuration. The intersection of Custer Avenue and N. Washington Street would be improved to accommodate future traffic and the new four-lane section of Custer.





The east side Frontage Road would be relocated to tie in directly to the N. Washington Street/Custer Avenue intersection. Westbound Custer Avenue to southbound I-15 traffic would access the interstate via a new loop ramp in the northwest quadrant of the interchange.

The intersection of Custer Avenue and N. Montana Avenue would require improvements to maximize the efficiency of turning movements and accommodate the additional laneage east of the intersection. These improvements would include curb, gutter, sidewalk, and turning lane improvements. The wider section of Custer Avenue east of N. Montana Avenue to N. Washington Street is planned to have curb, gutter and sidewalks.

Construction of a new interchange at Custer Avenue and I-15 will require coordination with Helena, Lewis & Clark County, and the Helena Valley Irrigation District to ensure that the project can be built without creating an adverse impact to surrounding property and watershed management stakeholders. Master planning and implementation of a major drainage outfall system is essential to support future development activity along the Custer Avenue and I-15 corridor. Helena is in the process of updating an initial draft drainage master plan for a large portion of the city that includes the Custer interchange area. This initial planning indicates that there are important detention and water quality benefits at the existing K-Mart ponds, located in the northwest quadrant of the proposed interchange that should be retained in a basin master plan.

The proposed drainage system of the interchange as described below would tie into the city's planned and designed outfall system. There are several outfall system alignment alternatives that can be considered during final design. Helena and MDT should work together and in conjunction with area developers to achieve a viable outfall system plan. The optimum drainage outfall system corridor would likely follow Custer Avenue east across Washington Street to a point along Prickly Pear Creek.

Runoff generated from the proposed Custer interchange can be planned within the framework of a basin master plan and managed to have minimal impact to the surrounding areas. The drainage areas upstream and downstream of the interchange are currently undeveloped and form a sheet flow drainage pattern with slopes ranging between 0.5% and 1.0%. Runoff from offsite basins impacting the interchange can be routed through the interchange in conformance with a master plan through culverts, ditches, and detention ponds located in the ramp areas. Detention ponds can also be planned during final design for the ramp areas to control the stormwater release rate from the interchange to pre-developed or historic levels. Existing roadside ditches and natural water courses can then continue to be used to convey stormwater from the interchange to master planned outfall points along the Custer Avenue and Prickly Pear Creek drainage corridor. In summary, final design plans for the Custer Avenue

interchange must be closely coordinated with Helena to ensure compatibility with the area master basin plans.

The addition of a new interchange at Custer Avenue would require one continuous auxiliary lane in each direction on I-15 between the Custer and Capitol interchange ramps. An additional auxiliary lane in each direction also would be required between Cedar Street ramps and Capitol ramps and between Custer ramps and Cedar ramps to maintain level of service B on the interstate. For a more detailed description of the proposed auxiliary lanes, see Section 4.4.2 and **Figure 4-7**.

To accommodate the addition of auxiliary lanes to the interstate, the twin I-15 bridges over the Montana Rail Link railyard must be replaced. These bridges are functionally obsolete and need to be replaced with or without the Custer Avenue improvements. Retaining walls are anticipated with the approaches to the structures to keep the expanded highway envelope within the existing right-of-way where necessary to minimize right-of-way impacts. No business or residential structures are anticipated to be relocated.

2.8.3 Alternative 2

Alternative 2 is a composite of transportation improvements including a new South Helena interchange and a new northern interchange at Forestvale Road. This alternative is also designed to optimize corridor transportation improvements without incurring undesirable environmental impacts.

Alternative 2 differs from Alternative 1 in two important engineering details. The first difference is the location of the new northern interchange at Forestvale Road, rather than at Custer Avenue. Custer Avenue widening is not required with Alternative 2 since there is not a Custer interchange proposed, and therefore is not included. The second is in the number and length of the auxiliary lanes required to support each build alternative. This alternative is enhanced by including five supporting elements to complete the proposed improvements under Alternative 2. The major components of Alternative 2 are:

- ▶ New interchange at South Helena (approximately 2.7 kilometers (1.6 miles) south of the Capitol interchange)
- ▶ Interchange improvements at Capitol
- ▶ New interchange at Forestvale Road
 - ◇ Construction of an auxiliary lane (each direction) on I-15 between Forestvale Road and the Capitol interchange plus a second auxiliary lane in each direction between Cedar and Capitol interchange ramps with appropriate transitions for adding and dropping auxiliary lanes (to be determined in final design). The

existing Custer Avenue bridge could be maintained if the auxiliary lane is constructed to the inside of I-15.

- ◇ Minor realignment of east side Frontage Road
- ◇ Slight realignment and widening of Forestvale Road between N. Montana Avenue and the east side Frontage Road
- ◇ Replacement of the twin I-15 bridges over the Montana Rail Link railroad due to the required auxiliary lanes
- ▶ Supporting elements (described in Section 2.8.4):
 - ◇ Lincoln Road interchange improvements
 - ◇ Montana City interchange improvements
 - ◇ Connect west side Frontage Road between Montana City and Colonial Drive
 - ◇ Widen Cedar Street to five 3.6-meter (12-foot) lanes from I-15 to N. Montana Avenue
 - ◇ Broadway underpass for pedestrian and bicycle use

2.8.3.1 South Helena Interchange

This improvement is a new interchange with I-15 designed primarily to address access, mobility, emergency services, and regional planning needs in northern Jefferson County and southern Lewis & Clark County. A complete description of this improvement is provided in Section 2.8.2.1 of this chapter.

2.8.3.2 Capitol Interchange Improvements

This improvement provides for the reconstruction of the existing Capitol interchange to address safety, capacity, mobility, and emergency service needs. A complete description of this improvement is provided in Section 2.8.2.2 of this chapter.

2.8.3.3 Forestvale Interchange

This improvement is a new interchange at Forestvale Road and I-15 designed primarily to address access, mobility and emergency service needs in the North Helena Valley. The proposed new interchange is a traditional diamond layout with standard northbound and southbound on- and off-ramps (see **Figure 2-9**).

At the present time, Forestvale Road extends east of N. Montana Avenue as a dirt road providing access to the Helena Gun Club. This road would be widened and paved for one travel lane in each direction plus 2.4-meter (8-foot) shoulders. Forestvale would cross over I-15 on a new bridge structure and continue east to an intersection with the east side Frontage Road. The east side Frontage Road and irrigation ditch

would need to be relocated approximately 137 meters (450 feet) east of its present location to allow sufficient spacing between the new interchange ramps and the Frontage Road intersection. Forestvale Road would not be extended east of the Frontage Road intersection. MDT currently owns the right-of-way for this interchange and road realignment.

The bridge over I-15 would be approximately 18 meters (60 feet) wide to accommodate three travel lanes and a 3.6-meter (12-foot) envelope on each side for pedestrians and bicyclists (see Section 4.8.2 for more discussion of potential pedestrian and bicycle amenities). The center travel lane would be striped for use as a left turn lane (see **Figure 2-12** for a typical cross section).

The existing intersection of N. Montana Avenue and Forestvale Road would require minor reconstruction to accommodate all turning movements. It is anticipated that reconstruction of the north, south and west legs of this intersection would be completed as part of MDT's current N. Montana Avenue project. The I-15 project would design the new eastern leg to be compatible with the N. Montana Avenue improvements.

The addition of a new interchange at Forestvale Road would require a continuous auxiliary lane in each direction on I-15 between the new Forestvale interchange and the Capitol interchange. This distance is 6 kilometers (3.7 miles). This new interchange location also will require an additional auxiliary lane in each direction between the Cedar Street interchange ramps and the Capitol interchange ramps. The auxiliary lanes are necessary to maintain level of service B on the interstate. For a more detailed description of the proposed auxiliary lanes, see Section 4.4.3 and **Figure 4-7**.

With construction of the auxiliary lane between Forestvale Road and Capitol to the inside, the existing Custer Avenue bridge can be maintained.

2.8.4 Supporting Elements

The following supporting elements are included with both build alternatives.

2.8.4.1 Montana City Interchange

The existing Montana City interchange bridge is deficient and is too narrow to handle traffic volumes anticipated by year 2025. The proposed improvement would replace the existing roadway bridge with a new bridge wide enough to accommodate three travel lanes and a 3.6-meter (12-foot) envelope on one side of the bridge for pedestrians and bicyclists. The recently completed pedestrian/bicycle bridge on the south side of the current Montana City bridge would be left in place and would be integrated with the new structure. The center lane on the new bridge would be used

for left turning movements. See **Figure 2-12** for a typical cross section and **Figure 2-16** for a conceptual layout.

Minor widening would be required for both ramps on the north side of the interchange to handle increased traffic volumes and turning movements. No changes are required to the south side ramps. All improvements are proposed to occur within the existing right-of-way.

On both the west and east side of the new bridge, short transition zones would be required to tie the three-lane bridge width into the current roadway layout.

2.8.4.2 Broadway Underpass for Pedestrians and Bicyclists

This improvement would provide an additional alternative crossing of I-15 for pedestrians and bicyclists to the south of the Capitol interchange. This improvement is designed to improve safety, support city and county plans and be responsive to input received from the general public and bicycle advocacy groups.

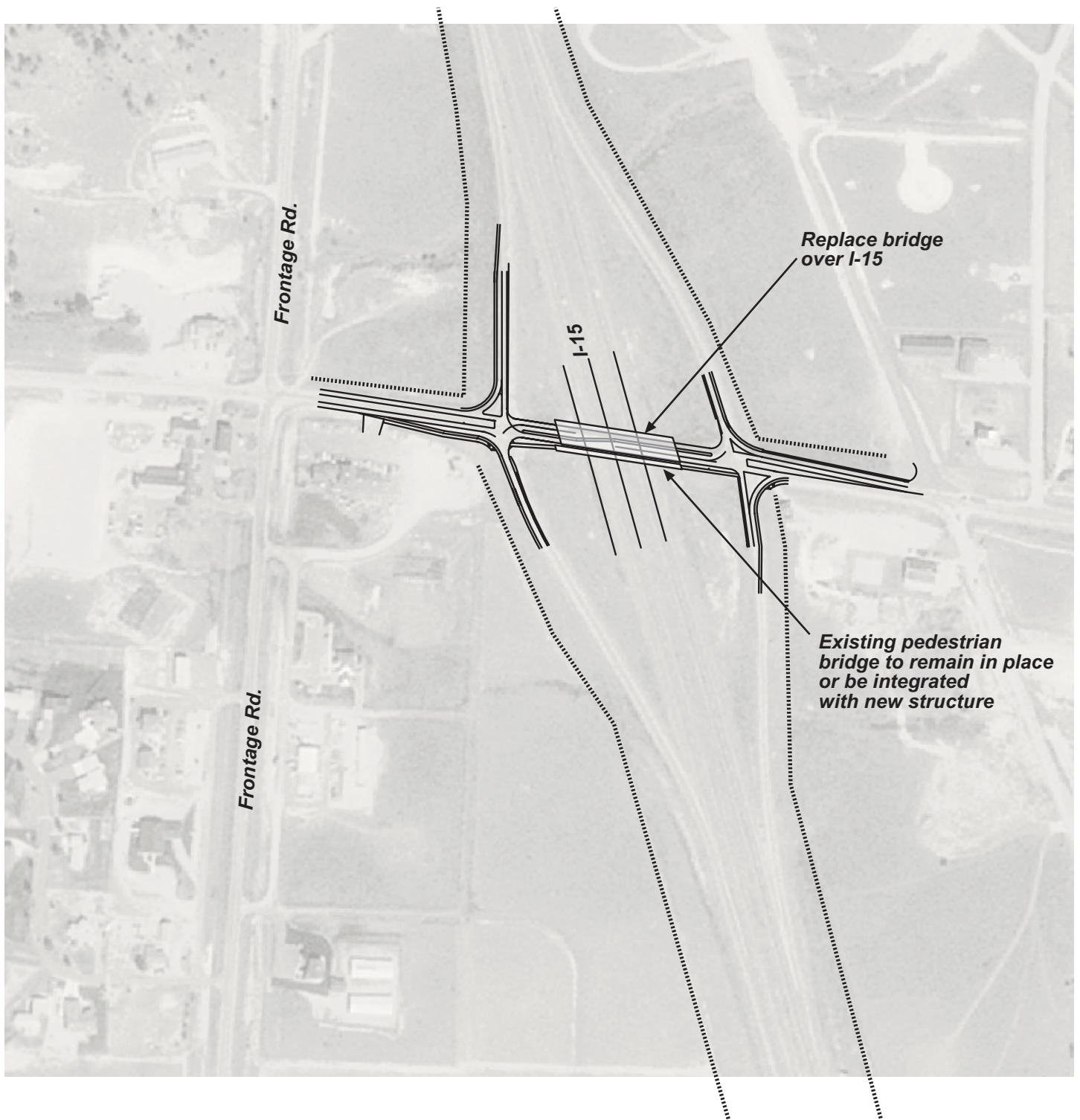
The recommended size and type of structure will be determined during final design. The structure will be sized to restrict vehicular traffic, but allow for adequate pedestrian and bicycle access. The Broadway pedestrian/bicycle underpass would include a trail that connects to the cul-de-sac on Broadway west of I-15. On the east side of I-15, the underpass would include a paved path connecting to 18th Street adjacent to the MDT facility. Appropriate lighting will be provided for pedestrian and bicycle user safety.

2.8.4.3 West Side Frontage Road

This improvement would provide a continuous Frontage Road on the west side of I-15 from Montana City to Colonial Drive. It is being designed primarily to reduce congestion at the Capitol interchange, support local planning studies, and provide better access to the hospital area and downtown from the south. At the present time, part of the Frontage Road is a paved 7.3-meter (24-foot) two-lane county road and part is an unpaved travelway without shoulders. Immediately south of Colonial Drive there is a 320-meter (0.25-mile) gap with no connection. The proposed improvements would complete the connection to Colonial Drive and provide a paved two-lane roadway with shoulders that meets county standards. The Frontage Road would be realigned closer to I-15.

2.8.4.4 Cedar Street Widening

This improvement would provide two travel lanes in each direction and a continuous center turn lane along Cedar Street from I-15 on the east to N. Montana Avenue on the west. This improvement addresses safety and mobility needs on existing east-



| Legend | |
|--------|--------------------|
| | = Proposed Roadway |
| | = Proposed ROW |

west roadways serving I-15. Minor widening may be required at the Cedar Street intersection with N. Washington Street to accommodate additional turn lanes. At N. Montana Avenue limited intersection improvements may be required to match the N. Main Street improvements currently under construction.

The Cedar Street bridge would be re-striped to accommodate five travel lanes and a sidewalk along the north side of the bridge (see **Figure 2-17** for a conceptual layout and typical cross section).

New curb, gutter and sidewalks are proposed along Cedar Street between I-15 and N. Montana Avenue. Stormwater drainage requirements will be addressed during final design.

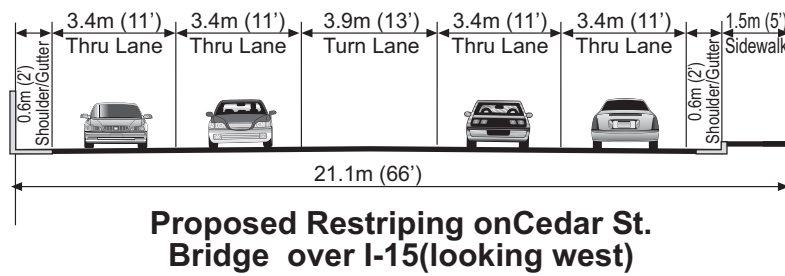
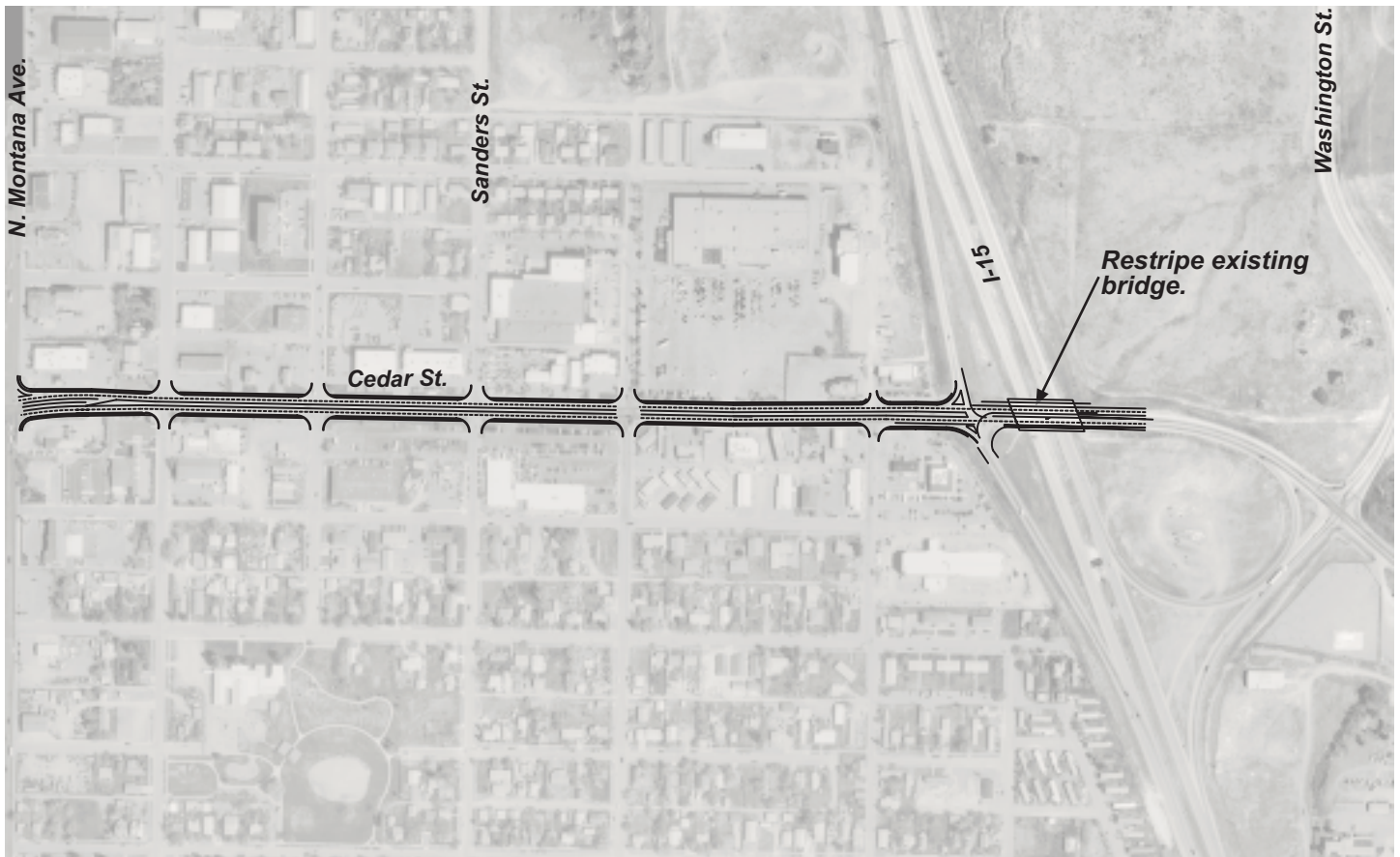
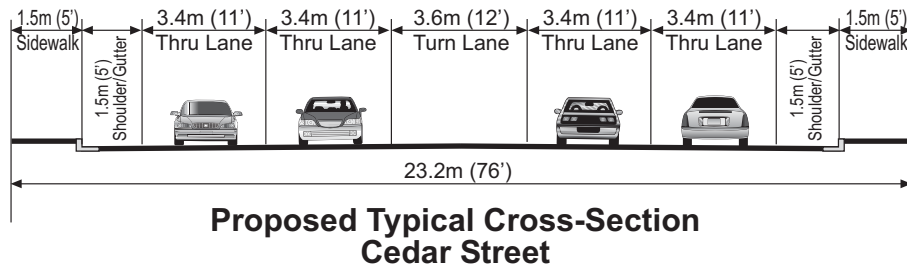
2.8.4.5 Lincoln Road Interchange

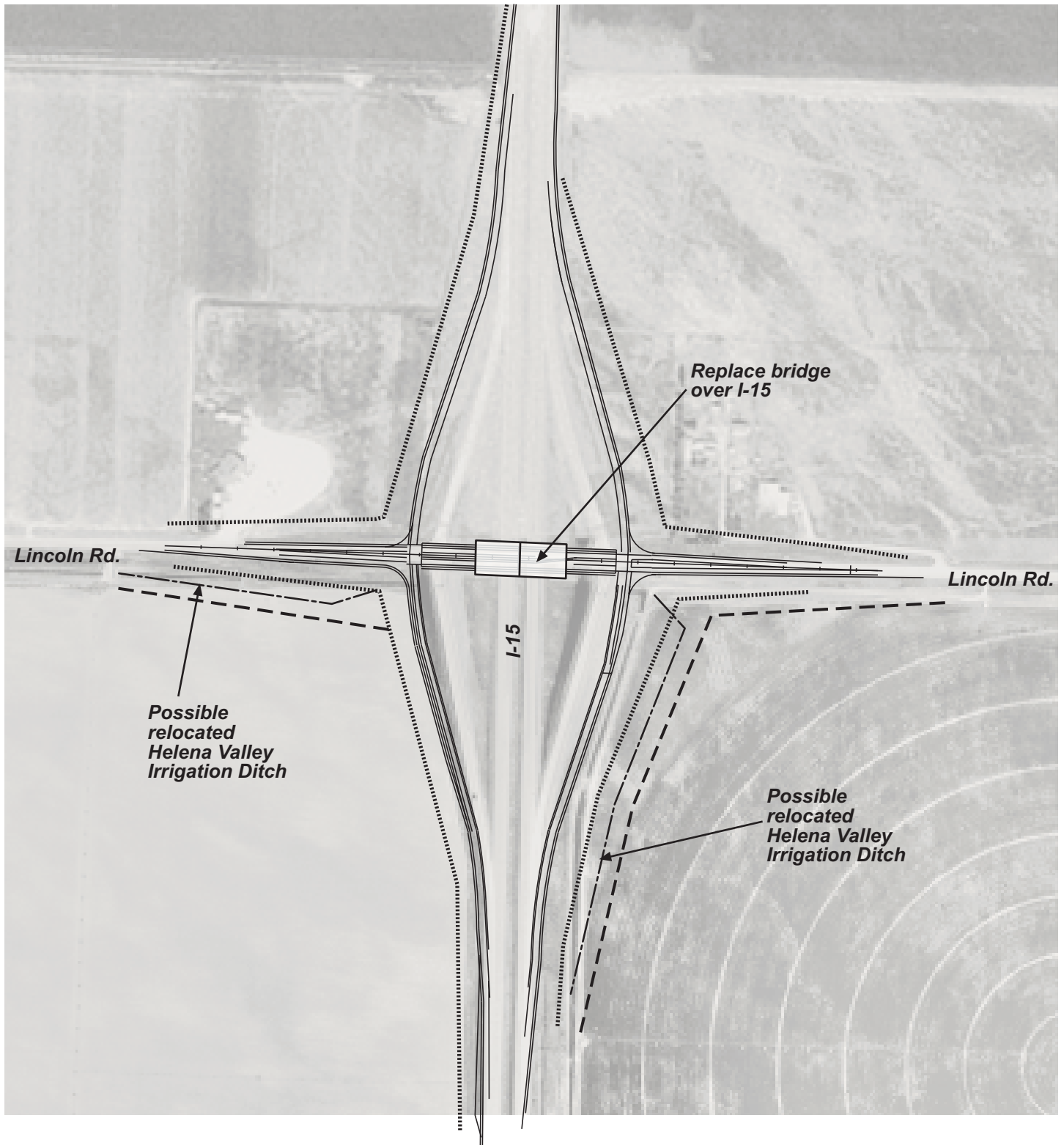
This improvement would provide for the reconstruction of the existing Lincoln Road interchange. The existing interchange has very poor sight distances, inadequate design for large trucks, has no provision for pedestrians and bicyclists, is too narrow to accommodate traffic volumes anticipated by year 2025, and currently experiences one of the highest accident rates of any location in the corridor. The proposed improvement would replace the existing bridge with a three-lane bridge with 3.6-meter (12-foot) envelopes on both sides for pedestrians and bicyclists (see Section 4.8.2 for more discussion of potential pedestrian and bicycle amenities). The center lane of the new bridge will be used for left turning movements. See **Figure 2-12** for a typical cross section and **Figure 2-18** for a conceptual layout.

All ramps serving the Lincoln Road interchange would be reconstructed to meet current design standards and the east and west approaches to the bridge would be improved to correct sight distance problems and other safety concerns. On both the east and west sides of the new bridge, short transition zones would be required to tie the three-lane bridge width into the current roadway layout.

2.9 Identification of the Preferred Alternative

As described in Section 2.1, Alternative 1 has been identified as the Preferred Alternative for the I-15 Corridor (Montana City to Lincoln Road) EIS. The determination that Alternative 1 best satisfied the purpose and need for the project followed a thorough review of the Draft EIS and all comments received during the 45-day comment period.





| Legend | |
|--------|-------------------------------|
| | = Proposed Roadway |
| | = Irrigation Ditch Relocation |
| | = Proposed ROW |
| | = Irrigation Ditch Easement |



2.10 Conceptual Preliminary Assumptions of Costs

The following preliminary assumptions of costs have been developed based on the conceptual designs prepared for this EIS analysis. The costs include pavement, earthwork, demolition, bridges, structures, culverts, retaining walls, traffic control, drainage, construction traffic control, allowances, mobilization, design engineering, permitting, construction engineering, and generalized estimates for right-of-way. The cost assumptions presented in **Table 2-4** were adjusted following the release of the Draft EIS to reflect more accurate local costs for asphalt, traffic control and contingencies. These cost assumptions are subject to further change as the design of each improvement is more fully defined.

Table 2-4
Preliminary Assumptions of Costs

| | Preferred Alternative | Alternative 2 |
|---|------------------------------|---|
| Forestvale interchange plus Frontage Road and ditch relocation | N/A | \$9 to \$10 million |
| Custer interchange plus Custer widening (N. Montana Avenue to N. Washington) and relocated east side Frontage Road | \$16 to \$18 million | \$4 to \$6 million to rebuild bridge, but no interchange ramps or widening on Custer Avenue |
| Auxiliary lanes on I-15 between northern interchange and Capitol interchange ramps to maintain LOS B. Includes reconstruction of I-15 bridges over the Montana Rail Link yard | \$20 to \$22 million | \$21 to \$23 million ⁽¹⁾ |
| Capitol interchange reconstruction, including Colonial Drive connection | \$27 to \$30 million | \$27 to \$30 million |
| South Helena interchange plus west side Frontage Road re-alignment | \$9 to \$10 million | \$9 to \$10 million |
| Supporting Elements | | |
| Lincoln interchange reconstruction | \$7 to \$8 million | \$7 to \$8 million |
| Cedar Street widening to five lanes | \$2 million | \$2 million |
| Broadway underpass for pedestrian/bicycle use | \$1.5 million | \$1.5 million |
| West side Frontage Road | \$1.5 million | \$1.5 million |
| Montana City interchange bridge reconstruction, ramp widening | \$4 to \$5 million | \$4 to \$5 million |
| Total Range | \$88 to \$98 million | \$86 to \$97 million |

⁽¹⁾ Alternative 2 has a higher cost for this improvement due to longer length of auxiliary lanes extending north to Forestvale Road. The cost assumes that the auxiliary lanes are added to the inside of the existing lanes.

2.11 Potential Funding for I-15 Improvements

Interstate 15 is the only north-south interstate highway in Montana and is a component of the Congressionally designated National Highway System (NHS). It is also part of the CANAMEX Corridor, a federally designated high-priority trade route serving important regional, interstate and international transportation needs. Given its importance to the transportation and economic health of the state and region, proposed improvements to the interstate and supporting roadways are eligible for federal and state funding through a broad range of categories. The types of improvements to be made (bridge replacement or repair, addition of auxiliary lanes, drainage improvements, provision of pedestrian and bicycle facilities, acquisition of right-of-way, construction of new interchanges, etc.) determine which categories of funding might be available, alone or in combination, to finance the improvements.

Table 2-5 presents eight funding categories that have the greatest potential to be used to pay for improvements along the I-15 Corridor. For each category, the table provides an estimate of the annual level of funding received by MDT and the average amount allocated to MDT's Great Falls District. The vast majority of the proposed I-15 Corridor improvements lie within the Great Falls District's area of responsibility. **Table 2-5** also identifies some of the types of transportation improvements that are eligible for funding under each category. Additional funding may also be made available for corridor improvements through city and county governments, private enterprises, and other federal-aid pedestrian/bicycle funding opportunities (www.fhwa.dot.gov/environment/bikeped/bp-guid.htm).

Funding decisions for individual improvement projects will be made by MDT and the Montana Transportation Commission following the FEIS and the Record of Decision. The current revenue stream is not sufficient to build everything proposed in either of the two build alternatives over the short term. Each component of these alternatives meets the Purpose and Need for the project and provides benefit to the transportation system and to the community, either as single projects or in combination with other improvements. MDT is committed to working with city and county officials and with the private sector to identify and prioritize future corridor improvements and funding opportunities.

**Table 2-5
Preliminary Assumptions of Funding Availability**

| Category of Potential Funding | Annual Funding Available Statewide Federal and State Funds (estimated) | Annual Funding Available, Great Falls District (estimated) | Examples of Improvements Eligible for Funding, by Category |
|---|---|---|---|
| National Highway System | \$97.0 million ⁽¹⁾ | \$16.6 million | Construction, reconstruction, resurfacing, restoration and rehabilitation of segments of the NHS, including interchanges, bridges and ROW acquisition |
| Interstate Maintenance | \$70.1 million ⁽¹⁾ | \$10.5 million | Resurfacing, restoration, rehabilitation and reconstruction including interchanges, overpasses and ROW acquisition on the Interstate System |
| Highway Bridge Replacement and Rehabilitation Program | \$25.2 million ⁽²⁾ | Uncertain | Rehabilitation or replacement of structurally deficient or functionally obsolete bridges on any public road |
| Surface Transportation Program-Secondary | \$24.1 million ⁽³⁾ | \$5.1 million | Construction, reconstruction, rehabilitation, resurfacing and restoration for highways and bridges on the State Secondary System |
| Montana Air and Congestion Initiative (MACI) | \$5.3 million ⁽⁴⁾ | Uncertain | Air quality equipment, intersection improvements, pedestrian and bike paths, signal synchronization ⁽⁵⁾ |
| Surface Transportation Program-Urban | \$8.2 million ⁽⁶⁾ | \$660,000 ⁽⁶⁾ | Construction, reconstruction, rehabilitation, resurfacing and restoration for highways and bridges on the State Urban System |
| Safety Program-Hazard Elimination | \$6.8 million ⁽⁷⁾ | Uncertain | Safety projects to eliminate hazards, including at-grade rail crossings on any public road |

continued

Table 2-5 (continued)
Preliminary Assumptions of Funding Availability

| Category of Potential Funding | Annual Funding Available Statewide Federal and State Funds (estimated) | Annual Funding Available, Great Falls District (estimated) | Examples of Improvements Eligible for Funding, by Category |
|--|---|---|---|
| Community Transportation Enhancement Program | \$6.5 million ⁽¹⁾ | \$350,000 ⁽⁸⁾ | Enhancements include facilities for pedestrians/bicyclists, scenic easement acquisitions, landscaping and historic preservation |

Footnotes:

- (1) Funds are available for projects statewide.
- (2) Funds are available statewide. Sixty-five percent of available funds are reserved for rehabilitation and replacement of deficient bridges on the state highway system, 35% for bridges not on the state highway system. MDT Districts are not allocated a set amount each year.
- (3) Funds are distributed to each of MDT's five financial districts based on a formula allocation.
- (4) Funds are distributed to 19 areas of the state which have been designated "non-attainment" for Federal air quality standards by the Environmental Protection Agency or are considered to be at "high-risk" for becoming non-attainment areas. Great Falls District does not receive an allocated amount each year.
- (5) MACI is a state program funded under the Federal Congestion Mitigation and Air Quality Improvement Program. Allocations are subject to change after program review/revision in 2003-2006.
- (6) Funds are distributed to each of Montana's 15 urban areas based on a formula allocation. Allocation is for the Helena urban area which has deficit balance until FY 2006.
- (7) Funds are distributed statewide to correct identified high hazard locations. Great Falls District does not receive an allocated amount each year.
- (8) The amount shown is a combination of Helena's and Lewis & Clark County's allocation.

2.12 Construction Phasing

Actual construction of the Preferred Alternative will be done in sequential phases as corridor needs develop over the next 20 years and as funding becomes available. Individual components of the Preferred Alternative, such as rebuilding the Capitol interchange or replacing the I-15 bridges over the Montana Rail Link, may require staged construction in which smaller or less costly elements of the entire

improvement are put into place prior to completion of all parts of the improvement. Two or more separate projects spread over a number of years may be required to complete the larger and more complex improvements identified in this FEIS.

A staged or phased construction will not diminish the need for a value of providing these improvements within the I-15 Corridor. Similarly, the need to provide these improvements over time is not expected to result in any direct, indirect, secondary or cumulative impacts of an adverse nature that would change the recommendations of this FEIS or require additional analysis to support the FEIS conclusions.

CHAPTER 3.0: AFFECTED ENVIRONMENT

3.1 Introduction

This chapter describes the baseline (existing) social, economic and environmental conditions for the Interstate 15 (I-15) Corridor study area that may be affected by the alternatives presented in Chapter 2.0. This chapter sets the background for the discussion of impacts in Chapters 4.0 and 5.0.

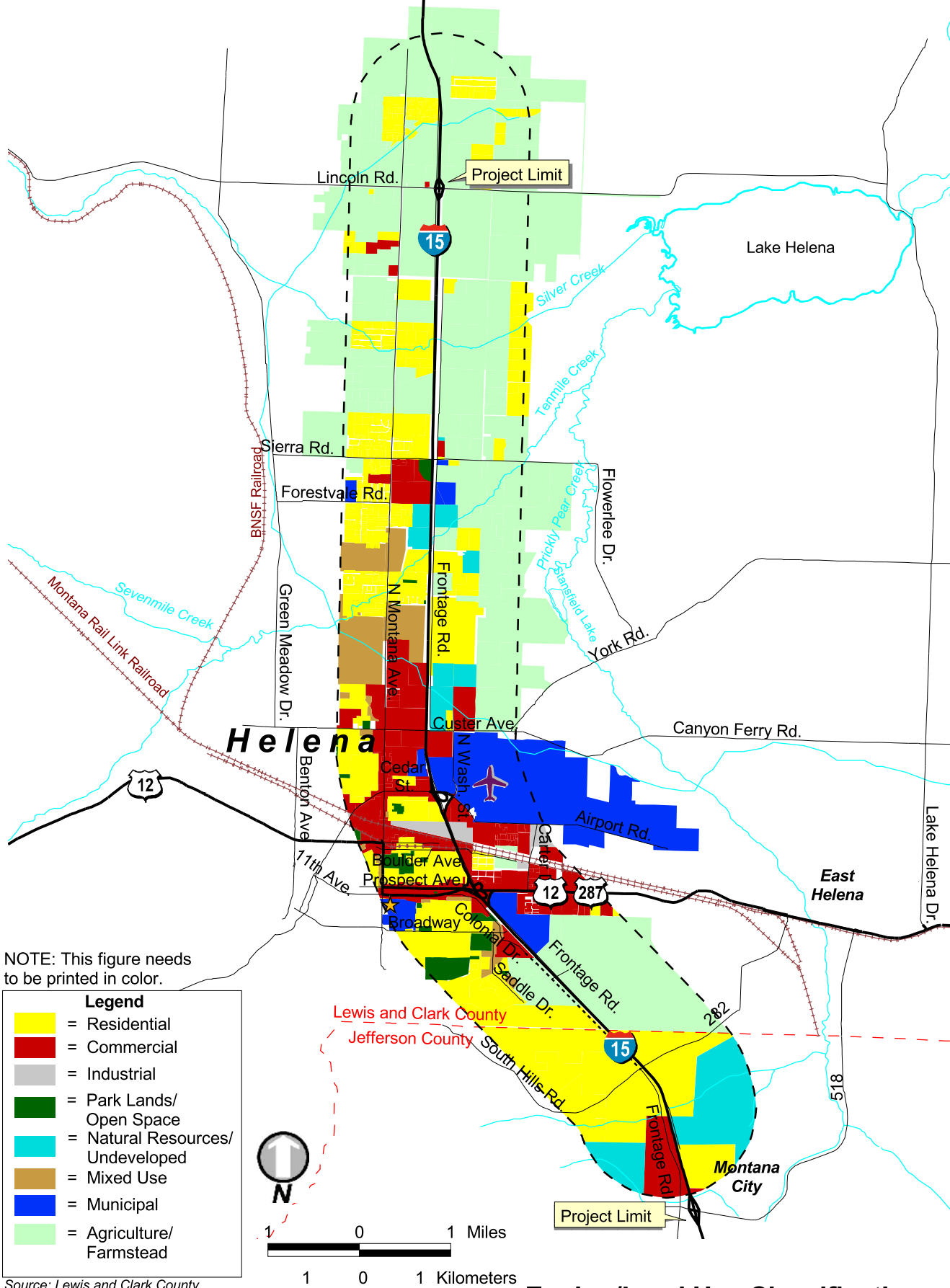
Statistics, plans, maps, and aerial photos from Lewis & Clark County, Jefferson County and the city of Helena were gathered and reviewed to illustrate the issues that exist around the study area. **Figure 1-2** shows the study area boundary and highlights the study area along I-15.

The study area is the area that would be directly affected by the construction of a build alternative as described in Chapter 2.0. The study area includes a 19-kilometer (12-mile) stretch of I-15 from the Montana City interchange in the south (RP 187) to the Lincoln Road interchange in the north (RP 200). The study area passes through the northern part of Jefferson County, the southern part of Lewis & Clark County and the city of Helena. I-15 is the major north-south travel route between Great Falls and Butte, servicing the Montana State Capitol of Helena and connecting with I-90 in Butte. When assessing potential indirect and cumulative impacts, the study area varies in size depending upon the resource evaluated.

3.2 Land Use and Zoning

This section describes current land use classifications and zoning for jurisdictions within the I-15 study area. This area includes portions of Lewis & Clark County and Jefferson County, the city of Helena, the city of East Helena, and unincorporated Montana City. **Figure 3-1** shows the generalized land use classifications along the I-15 study area 1.6 kilometers (1 mile) to either side of I-15. A discussion of land use and zoning by each jurisdiction is summarized in the sections below.

Several of the jurisdictions (Lewis & Clark County, Jefferson County and city of Helena) have developed comprehensive plans or growth policy plans, and subdivision and zoning regulations in accordance with Montana State law (MCA 76-1-601 et seq). Growth policies are required for jurisdictions that have planning boards or that regulate land use by zoning. These plans assist officials and residents alike in land development issues. They also highlight areas of concern and the development goals and objectives of the community. Growth Policy plans are based on an extensive community involvement process to assure that the concerns of the residents are represented. Existing and future land use is identified, as well as infrastructure



**Zoning/Land Use Classifications
within the Study Area**

Figure 3-1

needs. Zoning regulations are the tools used to implement the policies set forth in the Growth Policy Plans.

Since 1990 all jurisdictions have seen an increase in population. The percent change in growth from 1990 to 2000 ranged from 5% in the city of Helena to 27% in Jefferson County. Lewis & Clark County growth was 17%. This growth has impacted the pattern of land use and infrastructure needs. According to the U.S. Census Bureau, growth from 2000 to 2025 is expected to increase by 3% for the city of Helena, 42% for Lewis & Clark County, and 53% for Jefferson County.

3.2.1 Current Land Use and Zoning by Jurisdiction

3.2.1.1 Lewis & Clark County

I-15 runs directly through the heart of Lewis & Clark County. The *Lewis & Clark County Comprehensive Draft Plan*, January 2000 identifies five land use planning areas in the County. The majority of the I-15 study area falls within the Helena Valley planning area (HVPA). This area, as defined in the Plan, is shown in **Figure 3-2** along with the study area, which is a small central part of the HVPA.

Until the 1970s the Helena Valley planning area was predominantly agricultural, but since then has had the largest percentage of growth in the county. The population in the Helena Valley planning area in 2000 was 47,461 (total does not include unincorporated areas) representing a growth of 14% from 1990, predominately due to in-migration. While the area still contains a large portion of agricultural lands, there has been a large increase in residential, commercial and industrial development.

Land ownership in the county is predominately in private hands as shown in **Table 3-1**. Private land parcels consist of moderate to large ranches and farms and numerous ranchettes. Publicly owned land (see **Table 3-1**) is generally managed for livestock grazing, timber production, wildlife habitat, watershed resources, mineral resources, and recreation.

Table 3-1
Lewis & Clark County Land Ownership

| Land Ownership | Percent |
|-----------------------|----------------|
| Private | 66% |
| Public | |
| USFS | 22% |
| USBLM | 7% |
| State of Montana | 2% |
| Subtotal | 31% |
| Water Bodies | 2% |

Source: *Lewis & Clark County Comprehensive Draft Plan*, January 2000

Note: Numbers do not total to 100% due to rounding

**Canyon Creek/
Marysville
Planning Area**

**Canyon Ferry
Planning Area**

**Helena Valley
Planning Area**

Helena

**East
Helena**

**Montana
City**

Lewis and Clark County
Jefferson County

Project Limit

Project Limit

Lake Helena

York Rd



Source: Lewis & Clark
County Comprehensive
Draft Plan, 2000

INTERSTATE 15 CORRIDOR

Montana City to Lincoln Road

Carter-Burgess

Helena Valley Planning Area

Figure 3-2

General land uses in the Helena Valley planning area include residential, commercial, industrial, and parks and open space.

Residential Development

The increase in population in the Helena Valley planning area over the last ten years has generated the largest increase in residential land development in the county, most of this outside the Helena city limits. From 1986 to 1999, plat approval increased by 522% with 94 approvals in 1986 and 585 in 1999. The residential development has been a mixture of mobile homes and single-family dwellings in and around Helena.

Four areas in the county have experienced the most residential growth, the East Valley, the West Valley, the northwest Helena Valley and lands north and east of the city limits (*Lewis & Clark Comprehensive Draft Plan*). In the HVPA, the largest concentration of residential use includes the cities of Helena and East Helena, Eastgate Subdivision (northeast of East Helena), the area immediately north of Helena and the area immediately north of East Helena. The areas outside the city limits are served by individual wells and on-site treatment systems. Adjacent areas are under consideration for annexation by the city. This would support the extension of city water and wastewater services to these areas.

As residential development continues, the amount of land available for agriculture purposes will decrease. The amount of acreage in farm land in Lewis & Clark County decreased by 7% from 1992 to 1997 (most current year available).

Commercial Development

Commercial development within the HVPA is primarily concentrated within and adjacent to Helena. Types of development include large and small retail facilities, restaurants, banks, grocery stores, and gas stations. There are also commercial developments in and adjacent to East Helena that are primarily small retail and service establishments. This commercial base accounts for 50% of the employment in the Helena area. The study area also has seen an expansion in health care services including a new cancer treatment facility at St. Peter's Hospital and retirement and extended care facilities near the hospital.

Industrial Development

One of the primary industrial developments within the Helena Valley planning area was the ASARCO smelting facility in East Helena, which was closed in April 2001. Other industrial developments include a petroleum bulk storage facility, Hauser Dam and hydroelectric facilities (outside the study area but accessed from I-15 and Lincoln Road), rail lines and switching yards, several gravel quarry operations, and several wastewater treatment facilities.

Parks and Open Space

Lewis & Clark County and the city of Helena have a three-volume *Comprehensive Parks Recreation and Open Space Plan* (January 1998). This plan provides background data, a plan for Helena and a plan for Lewis & Clark County (see Section 3.20 for more information on parks and recreation resources). There are 30 sites dedicated as parks in the county totaling 104 hectares (257 acres). The majority of these are not adjacent to I-15, but may be accessed from I-15. Sierra Park and Treasure State Park are the only Lewis & Clark County parks near I-15. Sierra Park is located at I-15 and Sierra Road south of Rossiter Elementary School. Treasure State Park is located east of N. Montana Avenue in the Treasure State Acres subdivision. Spring Meadow Lake State Park, the only state-owned park in the Helena Valley planning area, is located approximately 6 kilometers (4 miles) west of I-15 and is managed by the Department of Fish, Wildlife and Parks (FWP). The Lake Helena Wildlife Management Area off Lincoln Road is also managed by FWP. Another area of large open space is the Helena Regulating Reservoir, which is managed by the U.S. Bureau of Reclamation.

Zoning

Lewis & Clark County has 41 special zoning districts, of which 10 are adjacent to I-15. These zoning districts stipulate what type of development can occur, with the necessary procedures and regulations. The 10 special zoning districts adjacent to I-15 are described in Table 3-2.

Table 3-2
Lewis & Clark County Special Zoning Districts Adjacent to I-15

| Special Zoning District | Definition |
|--------------------------------|---|
| 5A | Low-density, single-family and multi-family residential, small neighborhood commercial, and public lands and institutions land uses. This district includes the Treasure State Acres subdivision. [Low-density minimum lot area = 930 square meters (10,000 square feet)] |
| 41 (Lamb Ranchettes) | Single-family residential development and associated agricultural land uses. [Minimum lot size = 4 hectares (10 acres)] |
| 32 (Tenmile Creek Estates) | Low-density, single-family residential development. [Low density minimum lot area = 651 square meters (7,000 square feet)] |
| 35 (Pleasant Valley) | Low-density, single-family residential development. [Low density minimum lot area = 884 square meters (9,500 square feet)] |
| 18 | Single-family residential development. [Minimum lot area = 1,185 square meters (12,750 square feet)] |
| 28 | Single-family residential development including mobile homes. [Minimum lot area of 2,670 square meters (28,750 square feet)] |
| 29 | Known as the Helena Valley Estates subdivision. Includes low-density lot, single-family residential development. [Low density minimum lot area = 4,051 square meters (43,560 square feet)] |

continued

Table 3-2 (continued)
Lewis & Clark County Special Zoning Districts Adjacent to I-15

| Special Zoning District | Definition |
|-------------------------|--|
| 2 | Single-family residential development including mobile homes. Lot area shall not be less than .4 hectare (1 acre). Also includes agricultural transition area, medium-density [minimum lot area = 1,674 square meters (18,000 square feet)], single-family residential, commercial and light manufacturing, and high density residential. [Minimum lot area = 744 square meters (8,000 square feet)] |
| 13A (Bryant Tracts) | Single-family residential development. Minimum lot area of 929 square meters (10,000 square feet). Also included for general commercial development. |
| 37 | Permitted development uses include single-family and duplexes, churches, libraries, schools and colleges, parks and playgrounds, and fire stations. [Minimum lot area = 3,720 square meters (40,000 square feet)] |

Source: Lewis & Clark County Special Zoning District Guidelines

3.2.1.2 Jefferson County

Approximately 4 kilometers (2.5 miles) of the I-15 study area lies in northern Jefferson County between the Lewis & Clark County line and the Montana City interchange. Jefferson County is currently in the process of updating their 1993 *Comprehensive Plan* into a new *Growth Policy*. The draft of the *Growth Policy* is expected in 2003.

Jefferson County is predominately rural and undeveloped, with rangeland as its principal use. Forests cover nearly half of the county's land surface. Federal lands (lands owned by the USFS and BLM) comprise more than 50% of the county and much of the land is still being used today as it was in the past. Early land uses were directly related to extraction and utilization of natural resources with Placer gold mines and, later, hard rock mining common throughout the county. Two major mining operations are still active and are strong contributors to the county's economy, as is Ash Grove Cement near Montana City.

The predominant land use in the county is agriculture. Following mining, farming and ranching became the dominant "industry" in the 20th century. Most agricultural land is still being used to raise cattle and grow crops. However, some acreage has been converted to residential subdivisions, most notably in northern Jefferson County near the county line. This area, considered a bedroom community for residents working in nearby Helena, moved Jefferson County to the number one position for population growth in the state. According to U.S. Census Bureau reports, Jefferson County was the fastest growing county in Montana in 2001, with a 3.5% increase (356 new

residents) in Jefferson County for the year. Most of the growth occurred near the county line. Jefferson County is predicted to have the most growth (53%) in the study area by 2025.

Zoning

North Jefferson County zoning regulations are made up of seven land use classifications in 11 zoning districts. These regulations are intended to ensure orderly development in accordance with the *County Comprehensive Plan* and "to determine and define the location and use of buildings, structures, and the appropriate uses of land for basic resource, residential, commercial, industrial and/or other purposes." The land use classifications and definitions for the four classifications adjacent to I-15 in the Northern Zoning District are described in **Table 3-3**.

Table 3-3
Jefferson County Land Use Classifications Adjacent to I-15

| Land Use Classification | Definition |
|--------------------------------|--|
| Basic Resource | Primary purpose is for agricultural, timber, mineral, mining and recreational functions. |
| Residential Medium Density | Encourage well-planned residential development with a dwelling density lower than or equal to one dwelling unit per 2 hectares (5 acres) that is within reasonable proximity to basic public services. |
| Commercial | Permitted uses include commercial, retail businesses or services within an enclosed building and whose building floor space shall not exceed 2,787 square meters (30,000 square feet). |

Source: *Amended North Jefferson County Zoning Regulations, Map and Written Description*, October 1997. Contact the Jefferson County Planning Department for information concerning low- and high-density areas.

The county has several recommended planning principles for development, including preserving historic structures and features, encouraging cluster development, preserving open space, avoiding suburban sprawl, avoiding commercial strip development, and encouraging cluster corridor development.

3.2.1.3 City of Helena

The city of Helena was founded in 1864 as a mining camp but soon grew to become the state capitol. In 2000 the city's population was 25,780 and is expected to increase by 3.3% over the next 25 years to 26,641. Helena is the major city in Lewis & Clark County and accounts for nearly half of the total county population.

Helena adopted a new *Growth Policy Plan* on October 29, 2001. This plan establishes objectives and policies for generalized patterns of future land use and development. This plan is based on the city's *1994 Comprehensive Plan*.

In addition to the *Growth Policy Plan*, the city has a Zoning Ordinance that regulates the development and use of land in established zoning districts and zoning maps that reflect present and proposed land uses for specific parcels. There are also Subdivision Regulations that set the standards for land development within the city. (See Section 3.2.2.2 for more detail on this area.)

Helena's annexation policy is briefly discussed in its *Growth Policy Plan*. In general, the city, in cooperation with the county, has identified urbanizing areas (4.8 kilometers [3 miles] beyond current city limits) that could be suitable for annexation. These urban areas are included in both the city's and county's plans for the 20-year horizon and are located east, west, north and south of the city.

Since 1994 Helena has realized a substantial amount of growth in all sectors particularly in housing and commercial development. There were 115 new building and housing permits issued in 2001, an increase of 26% from 2000.

The city of Helena's *Growth Policy Plan* identifies the following land use development patterns:

Open Space

The open space classification includes any public land provided or preserved for park or recreational purposes, for conservation of land or natural resources, or for historic or scenic purposes. A total of 445 hectares (1,100 acres) of parks, open space, trails and special-use facilities is located in Helena. Existing park and recreation areas are comprised of several park types from neighborhood parks to undeveloped parkland. Approximately 78% of Helena's parkland is occupied by Mount Helena City Park and Bill Roberts Golf Course, which are located within 8 kilometers (5 miles) west of I-15. There is one proposed park, Smith School Park, adjacent to I-15 on Broadway at Colonial Drive. Approximately 261 hectares (645 acres) have been added to the city's open space system in the southern portion of Helena as a result of a voter-approved bond. For more information on Parks and Recreation Resources see Section 3.20.

Residential

This classification includes low density, medium/high density, and mixed residential and commercial development. Most of the residential development that has occurred in the past 20 years has been on Helena's southeast side. Development has been a mixture of single-family homes and multi-family apartments, condominiums, and townhomes. Other areas around the city are expected to develop as infrastructure is improved and as areas are annexed. The types of residential development occurring and expected to occur in these areas are condominiums, townhomes, upscale single-family residences, multi-family units, and mixed-use developments. In the past ten years, 11 major subdivisions consisting of 313 lots located on 56 hectares (138 acres) have been developed. Some property is occupied by mobile home parks. The city

also has seen some infill development and conversion back to single-family homes of some of the houses converted to apartments in the past.

Commercial/Industrial

Commercial development consists primarily of retail businesses including large retail facilities, restaurants, banks, and warehousing and transportation-related businesses. Many national chain stores also have appeared or are planned along the edges of the city. New commercial uses are developing along the north side of Custer Avenue, N. Montana Avenue, Prospect/11th, and Cedar Street. These commercial corridors are adjacent to, cross over, or are accessed from I-15. For the most part, commercial development is concentrated within and adjacent to Helena. State government offices are located throughout the city, around the airport, the downtown area and south and east of the Capitol interchange on US 12.

Industrial uses in Helena consist primarily of warehouses and distributing centers with some small-scale light-manufacturing activity. The areas have been concentrated east of I-15 between the airport and US 12. This area is known as the Industrial Park area and was established in the 1970s. Major industrial facilities outside the city are the same as those identified for Lewis & Clark County (see Section 3.2.1.1).

The Helena Regional Airport property is located east of I-15 and north of Airport Road, within the city limits of Helena. It is zoned as an Airport District and for uses related to airport uses, and facilities necessary for operation, maintenance, and protection of airports.

Special Use Areas Outside the City

There are two special use areas outside Helena, the Fort Harrison Federal Community and the ASARCO smelting facility. The Fort Harrison Federal Community is about 10 kilometers (6 miles) west of Helena. It serves the Montana National Guard and the Veterans Administration Hospital and is undergoing a tremendous expansion. Municipal water and sewer presently serve the facility. The presence of this infrastructure could influence additional development in the area. The ASARCO smelting facility while located in East Helena is an area that has close proximity to the city of Helena and is identified as an area of future growth and possible annexation by the city. The facility recently closed after over 100 years of operation and has been designated a Superfund site by the U.S. Environmental Protection Agency (EPA). The facility presents environmental as well as economic issues for Helena for future development. These Special Use Areas also were identified in the Lewis & Clark County *Comprehensive Draft Plan*, January 2000.

Zoning

The *Zoning Ordinance of the City of Helena* (revised May 1985) divides and classifies Helena into 16 use districts. Definitions for the eight use districts adjacent to I-15 are described in **Table 3-4**.

Table 3-4
City Use Districts and Definitions Adjacent to I-15

| Use District | Definition |
|--------------------------------------|--|
| Open Space/Residential (OSR) | Provides for residential development consistent with the physical constraints present and according to the natural capacity of the land and available public and private services. |
| Medium-density Residential (R-3) | Multi-family residential structures include multi-family dwellings, condominiums, townhouses, mobile homes, and R-1 and R-2. |
| Residential/Office (R-O) | High-density residential development and professional and business offices to provide a mix of uses which are compatible. |
| General Commercial (B-2) | Provides for a broad range of commercial operations and services and those appropriately located within a shopping district. |
| Commercial-Light Manufacturing (CLM) | Provides for wholesale trade, storage and warehousing, trucking and transportation terminals, light manufacturing, outdoor advertising businesses, and related or compatible business or office use. No residential use should be permitted. |
| Manufacturing and Industrial (M-I) | Provides for manufacturing and other industrial needs of the city in appropriate locations. |
| Public Lands and Institutions (PLI) | Provides for, and applies only to, public and quasi-public institutional uses and lands and recreational and public service activities for the general benefit of the citizens of the city. |
| Transitional (T) | Intended to assure, in appropriate situations, an orderly, proper and harmonious transition between zoned districts of different restrictions and characteristics. |

Source: *Zoning Ordinance of the City of Helena*, as revised May 1985.

High Density = 140 square meters (1,500 square feet) of lot area for each unit if two or more; 456 square meters (5,000 square feet) if only 1 unit

Medium Density = 279 square meters (3,000 square feet) of lot area for each unit if 2 or more; 465 square meters (5,000 square feet) if only 1 unit

3.2.1.4 East Helena

East Helena is approximately 6 kilometers (4 miles) east of Helena in Lewis & Clark County. East Helena's population in 2000 was 1,642. East Helena has not prepared a *Comprehensive or Growth Policy Plan*. General land uses in and around East Helena include residential, industrial, and commercial.

Zoning

East Helena does not have a Zoning Ordinance or Zoning Regulations.

3.2.1.5 Montana City

Montana City is 4 kilometers (2.5 miles) south of the Jefferson and Lewis & Clark County line along Highway 518 a short distance from the Montana City/I-15 interchange. The population in 2000 was 2,094. Since Montana City is unincorporated it falls under the jurisdiction of Jefferson County (see Section 3.2.1.2).

Zoning

Montana City does not have a Zoning Ordinance or Zoning Regulations.

3.2.2 Future Land Use

3.2.2.1 Future Development

Continuing growth and development is projected to occur within the Helena Valley by 2025. Future land use is a major determinant of future transportation needs. The amount of development projected was based on an interpolation of the U.S. Census Bureau projections for 2020 and 2030 population growth for Lewis & Clark and Jefferson Counties. The number of households was estimated based on the current ratio of population to households (2.47). Employment growth was projected by applying the existing ratio of jobs to population (.75) to the census projections for population. The projected number of households and employment for 2025 in the Helena Valley are shown in **Table 3-5**, along with the households and employment in 2000.

Table 3-5
Population and Employment Forecasts for the Helena Valley

| Type of Development | Year 2000 | Year 2025* |
|----------------------------|------------------|-------------------|
| Households | 23,000 | 33,000 |
| Retail Employment | 8,500 | 12,100 |
| Non-Retail Employment | 34,100 | 48,600 |

Source: U.S. Census Bureau

*Numbers shown are rounded figures based on an interpolation of growth in population from the U.S. Census Bureau between 2020 and 2030. Employment projections are based on the ratio of population to employment for 2000 applied to the projected population for 2025.

The numbers in **Table 3-5** show a growth in population and employment of approximately 43% between 2000 and 2025 for the Helena Valley. This translates into a net increase of 10,000 households; 3,600 retail jobs; and 14,500 non-retail jobs over the 25-year period.

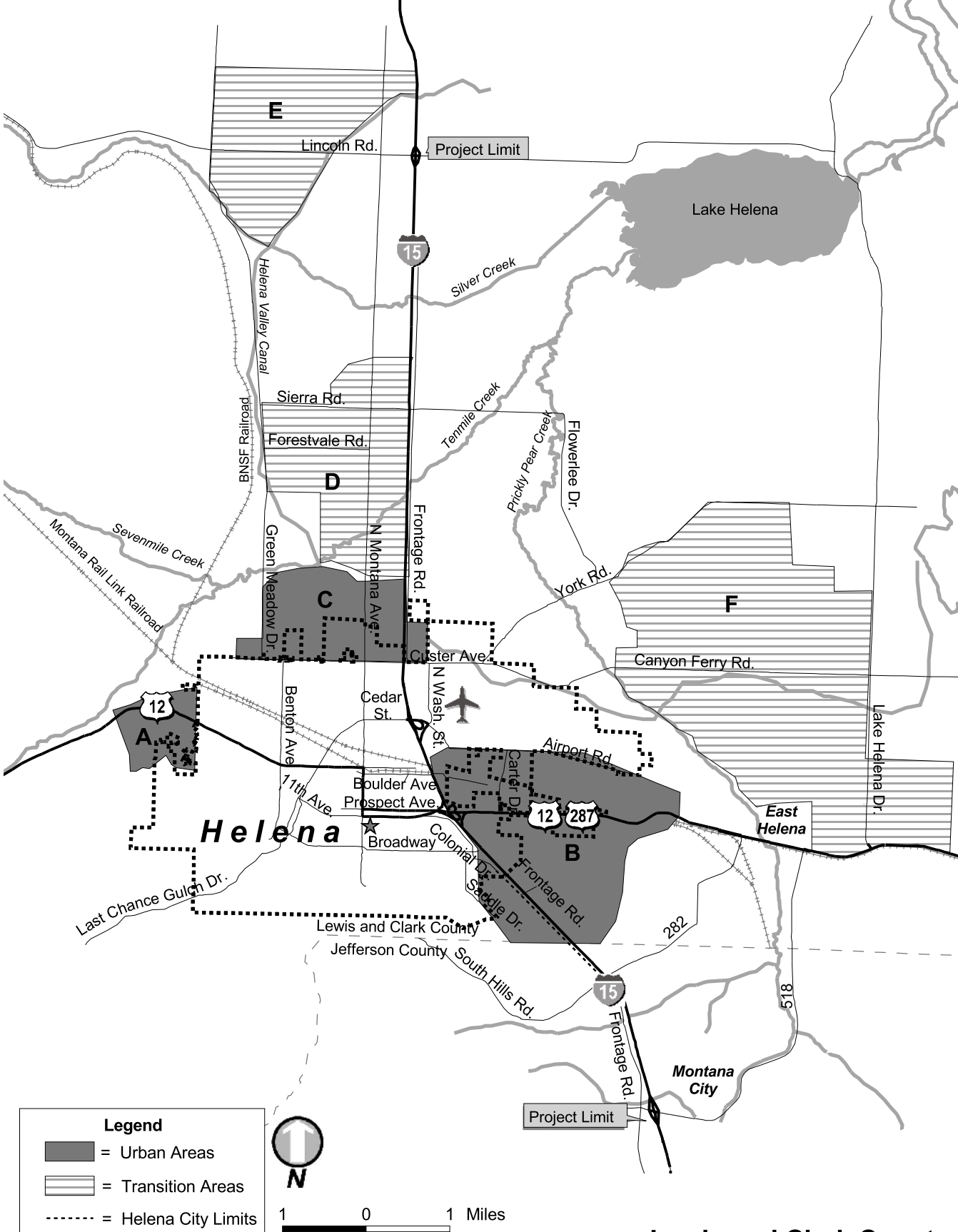
3.2.2.2 Location of Future Development (based on development plans)

Both Lewis & Clark and Jefferson Counties identified general areas where they expect new development to occur. The *Lewis & Clark County Comprehensive Draft Plan*, January 2000 includes a future land use plan that recognizes existing development patterns and infrastructure needs though some of these areas may have environmental, service, or other considerations that could affect future development. The future land use plan identifies Urban Areas and Transition Areas. The Urban and Transition Areas for Lewis & Clark County are shown in **Figure 3-3**.

Urban Areas are adjacent to Helena and are “compatible with planned municipal infrastructure within the 20-year horizon.” Eventually these areas would be annexed by the city of Helena to accommodate higher density development, with an emphasis on infill. To accommodate higher densities, Urban Areas are targeted for future capital facilities investment. Three Urban Areas are identified in the Plan and are described below.

- ▶ **Area A:** Located on the west side of Helena, north of Mount Helena City Park and south of Tenmile Creek. This area was identified due to municipal sewer needs as existing septic systems fail. Some of the development in the area is served by Helena water supply lines. The street network in this area is well integrated with the city of Helena, though many streets are in poor condition. There is some existing residential and commercial development that is currently zoned, while some development is not. While there are some undeveloped tracts, future development is constrained by the limited water supply and wastewater treatment facilities.
- ▶ **Area B:** Located southeast of Helena on both sides of I-15. This area has few environmental constraints and is within the city of Helena planned service for municipal water and sewer. The county anticipates residential development with associated commercial and public facilities. The city’s water and wastewater plans include service to this area. Transportation services will need to be developed to serve the future growth in the area. The city has identified several desirable transportation improvements for this area including the eastward extension of Broadway (under I-15) to US 12 and a southward extension of Colonial Drive to Montana City. Future transportation links, such as an I-15 interchange and eastward extensions to US 12, will need to be delineated. Several proposed pedestrian/bicycle trails are located in this area as well.

South of the airport and north of US 12 is a growing commercial/light manufacturing and industrial development area. Some city of Helena infrastructure is in service in this area.



Source: Lewis & Clark County
Comprehensive Draft Plan, 2000

- ▶ **Area C:** Located north of Custer Avenue and city limits and between I-15 and Green Meadow Drive. This is another area with few environmental constraints and is within the city's planned service areas for water supply and wastewater treatment. It is within the urban limits of the *Helena Area Transportation Plan*. Commercial development along N. Montana Avenue has incrementally been annexed, lot-by-lot, by the city. Residential development should be close to and integrated with the commercial development in the area to help reduce auto-dependency. This area has become a community/regional commercial area and is expected to continue as such.

Transition Areas contain existing low-density development and community services that could accommodate additional infill development, but are "located beyond a reasonable service boundary for the city of Helena within the 20-year planning horizon." Transition Areas could be targeted for future capital facilities investment if the city of Helena were to take over responsibilities for services in the Urban Areas. Public investment in infrastructure is not currently planned in the near term. Three Transition Areas are identified in the Plan and are described below.

- ▶ **Area D:** Located in the west Helena Valley. The area is characterized by undeveloped areas with potential for in-fill, some environmental constraints (floodplain, groundwater quality), zoned areas for agricultural, residential and commercial uses, an existing fire station (on Forestvale Road), a school (Rossiter School on Sierra Road), and Sierra Park (on Sierra Road). Much of the predicted development, both residential and commercial, was based on the assumption that a new interchange at Forestvale Road and I-15 was to be constructed following the *1992 Interstate 15 North Helena Valley Interchange, Lewis & Clark County, Montana, FEIS*. The construction of the Forestvale interchange has not occurred. However, the inclusion of this area as a Transition Area also is based on the development patterns taking shape in the area and the need for upgrading and extending infrastructure to accommodate the development.
- ▶ **Area E:** Located in the northwest Helena Valley. Agricultural lands, low-density residential development, and water quality issues characterize the area. The West Helena Valley Fire District serves this area, as does the Jim Darcy Elementary School and commercial center on Lincoln Road. Water availability is a critical issue for future development in this area and development should be limited unless and until an alternate water supply is established. The area has residential development, a portion of which is currently zoned residential and some non-residential development.
- ▶ **Area F:** Located east of Helena between York Road on the north and US 12 on the south. There are a number of environmental constraints to development in this area due to the agricultural lands and irrigation facilities, floodplains and natural resources to the north and west, and heavy metals contamination near US 12. Some of the area to the west near Prickly Pear Creek is zoned for residential and

ranchette use, but the majority is not zoned. There is a small commercial center and two gravel operations in the area. The area is served by two fire districts, two elementary schools, a central water supply and wastewater treatment system for the high-density developments, and individual systems for the moderate and low-density developments. Water quality is an identified concern and needs to be protected.

The *Jefferson County Comprehensive Plan* anticipates that suburban or large-lot rural development will continue along the I-15 Corridor between the Lewis & Clark County line and Montana City. This is primarily due to the north-south access provided by I-15 and proximity to Helena.

3.2.2.3 Location of Future Development (based on Land Use Advisory Group)

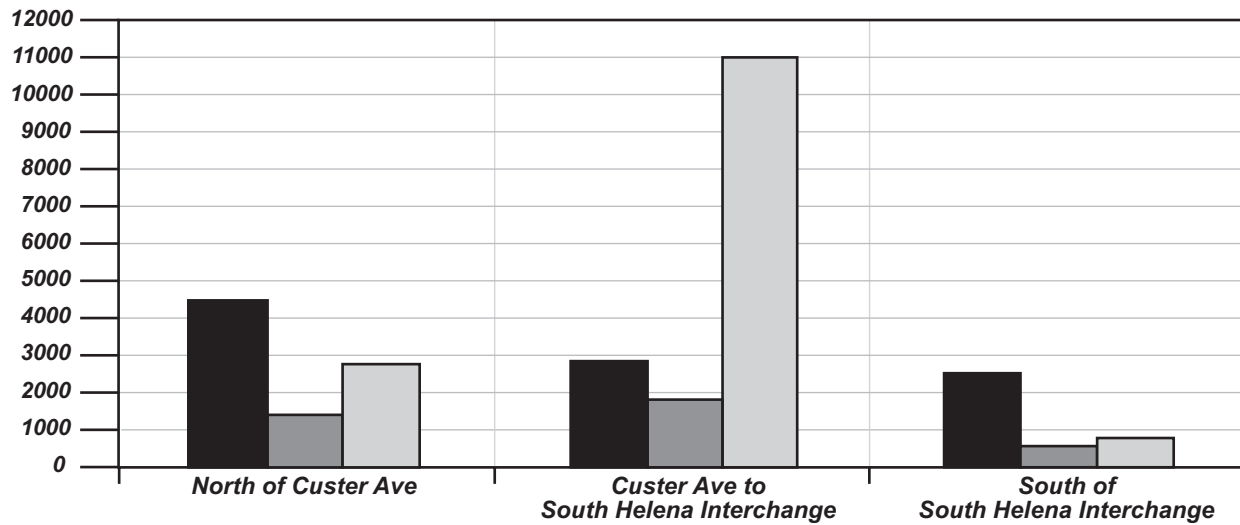
Additional information on the location of new development was developed as part of the public scoping process for the EIS. A Land Use Advisory Group was formed to provide direction as to where future population and employment growth might occur in the Helena Valley. This group was made up of individuals with knowledge and expertise regarding development in the Helena Valley. The group included representatives from Lewis & Clark County, Jefferson County, city of Helena, Growing Friends, Plan Helena, Prickly Pear Land Trust, Helena Area Chamber of Commerce, and several business owners.

With guidance from the Land Use Advisory Group, the potential location of future development for the Helena Valley was determined. The group developed three alternative land use growth distribution scenarios, including:

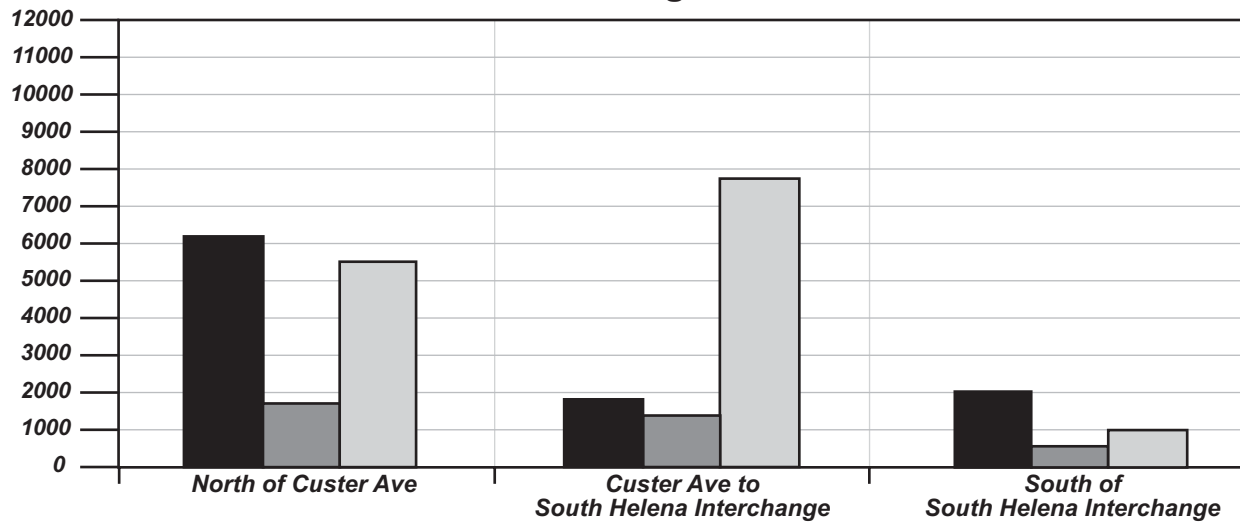
- ▶ **A No-Action Scenario**—no new interchanges would be built on I-15 in the Helena Valley.
- ▶ **A New North Interchange Scenario**—development of a new interchange somewhere north of Cedar Street.
- ▶ **A New South Interchange Scenario**—development of a new interchange somewhere between the Capitol interchange and the Montana City interchange.

Land use distribution scenarios were developed to show the general influence of improved access to I-15 on land use development patterns in the Helena Valley. The total amount of growth in population and employment in the Helena Valley described in **Table 3-5** did not change, but was distributed differently based upon the Land Use Advisory Group's determination of the influence of improved access in the northern and southern sections of the I-15 Corridor. The Land Use Advisory Group's distribution of population and employment growth for the three land use distribution scenarios is summarized in **Figure 3-4**. **Figure 3-5** shows the same information as

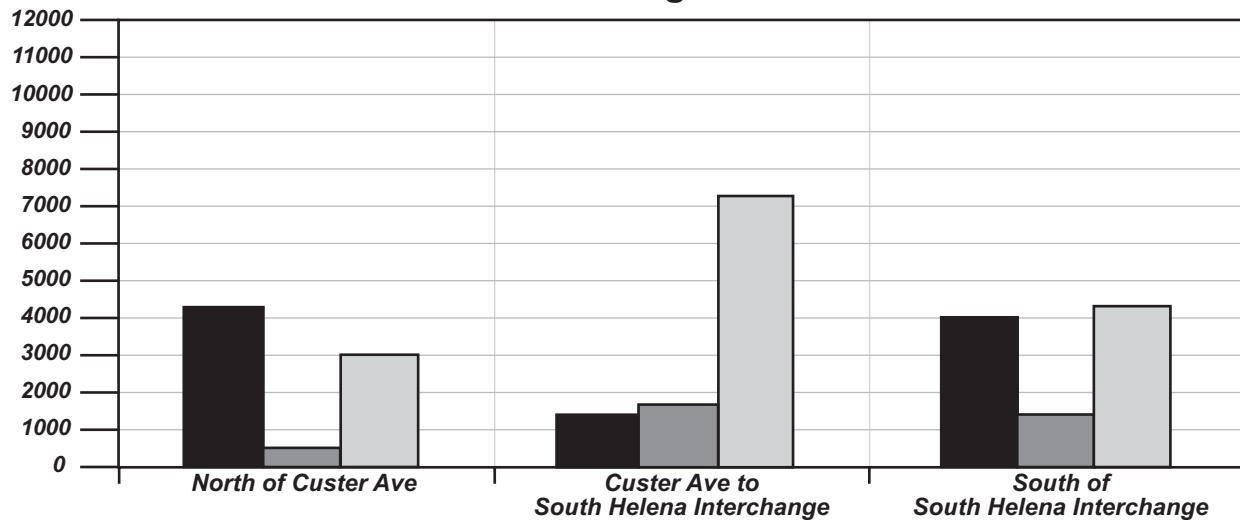
No-Action Land Use Scenario



New North Interchange Land Use Scenario



New South Interchange Land Use Scenario



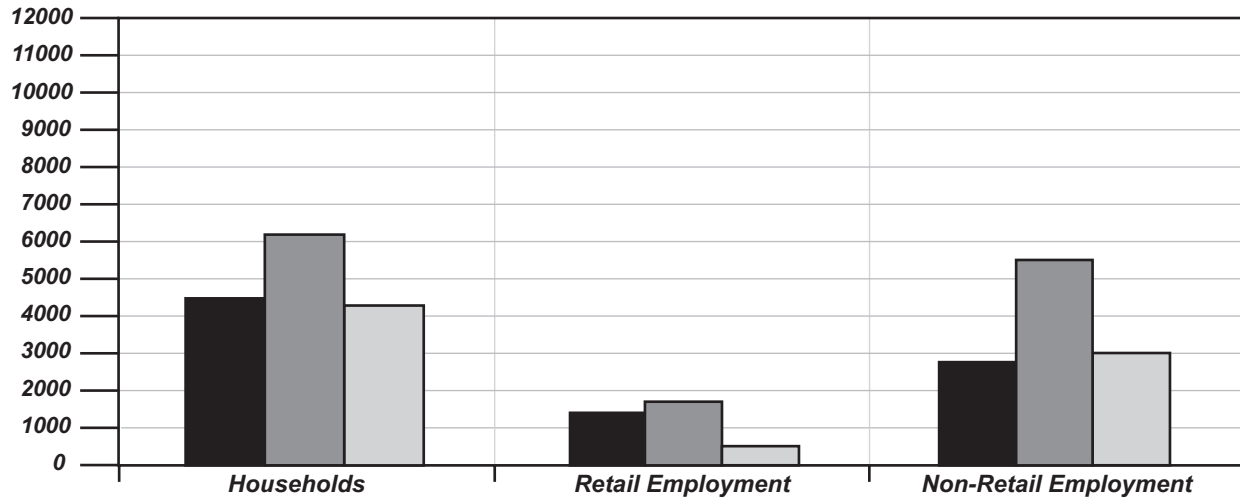
New Households
(Total = 10,000)

New Retail Employment
(Total = 3,600)

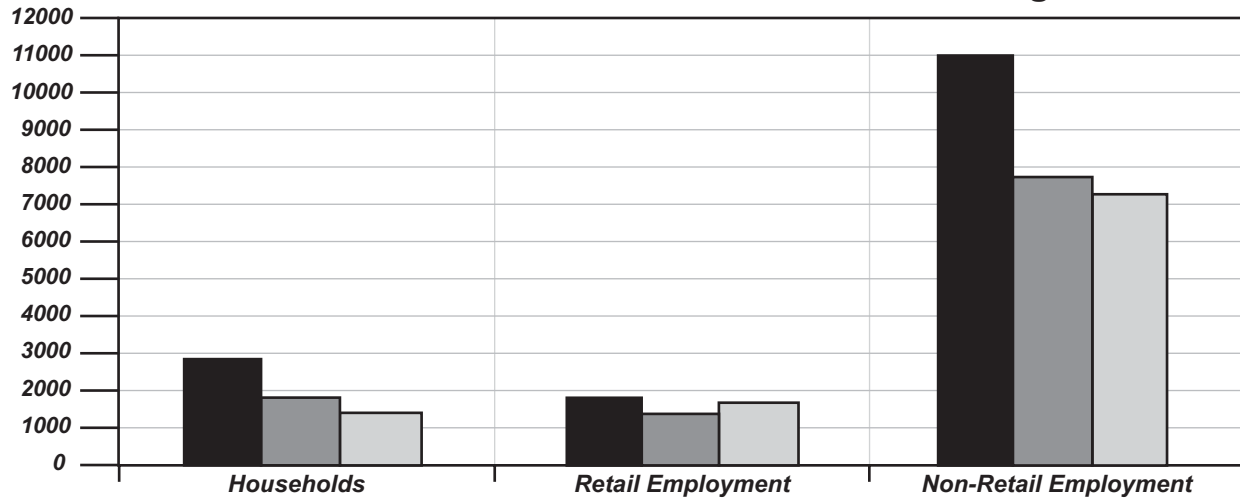
New Non-Retail Employment
(Total = 14,500)

Year 2025 Future Land Use Growth Scenarios

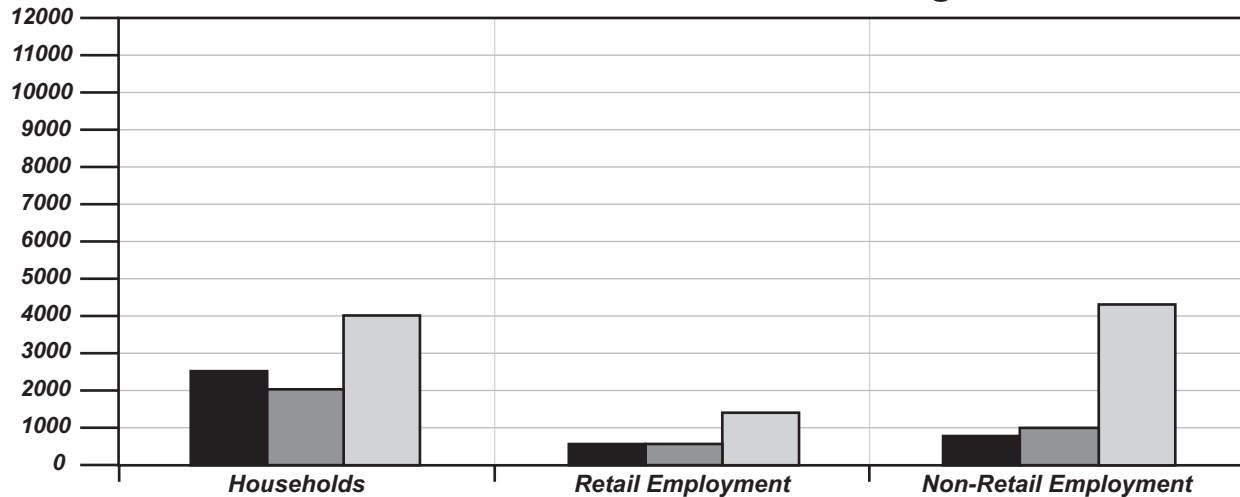
North of Custer Avenue



Custer Avenue to South Helena Interchange



South of South Helena Interchange



**No-Action
Land Use Scenario**



**New North Interchange
Land Use Scenario**

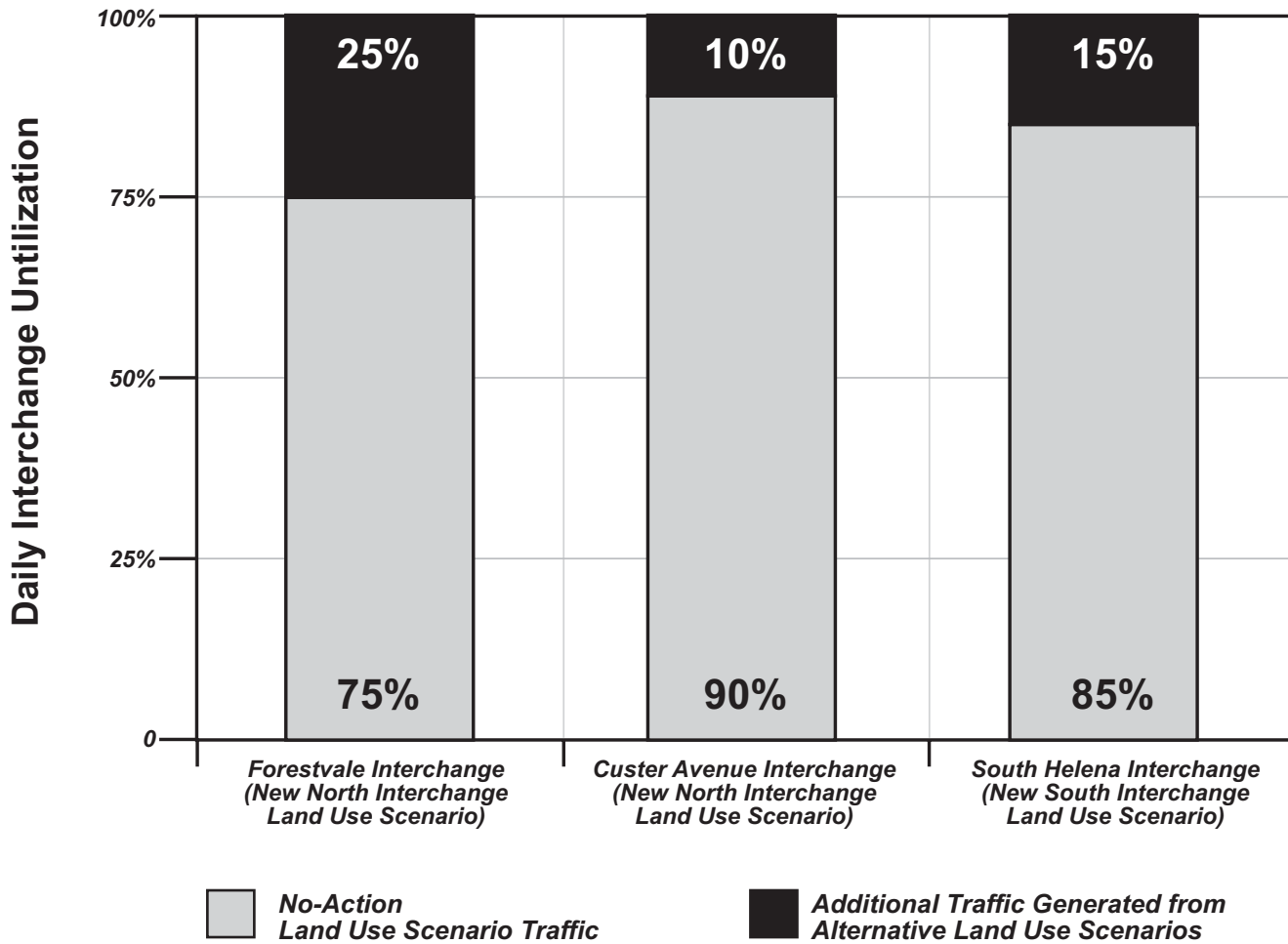


**New South Interchange
Land Use Scenario**

Figure 3-4 but with future land use growth broken down by location rather than by land use scenario. **Figure 3-5** shows the three alternative land use scenarios for the Helena Valley segmented into three areas: the area north of Custer Avenue, the area between Custer Avenue and the proposed South Helena interchange, and the area to the south of the proposed South Helena interchange. Generally, the Land Use Advisory Group chose to place the greatest emphasis on new household growth north of Custer Avenue under all three land use scenarios. Retail employment did shift some based upon the land use scenario with more retail employment occurring to the north under the New North Interchange Land Use Scenario and more to the south under the New South Interchange Land Use Scenario. Retail employment in the Custer to South Helena segment remained relatively the same. For non-retail employment the greatest share of the growth occurred in the Custer Avenue to South Helena segment under all three scenarios.

Sensitivity testing of the influence of the land use scenarios developed by the Land Use Advisory Group on traffic patterns was performed using the Helena Urban Travel Demand Model developed by MDT. The results of the sensitivity testing are shown in **Figure 3-6** which shows the daily utilization of three potential new interchange locations broken down by the percent of traffic that would occur under the No-Action Land Use Alternative and the additional traffic that would be added if either the New North or New South Interchange Land Use Scenario were to occur. This graph evaluates how much new land use and associated traffic follows the interchange and how much can be expected in the area regardless of the interchange being built.

Generally, **Figure 3-6** indicates that the utilization of a new Forestvale interchange would be the most heavily influenced by a change in land use scenario. Approximately 25% of the traffic using a new Forestvale interchange would come from the shift in land use projected to occur under the New North Interchange Land Use Scenario. A new Custer Avenue interchange is projected to have about 10% of its traffic generated from a change in land use under the New North Interchange Land Use Scenario. Finally, a new South Helena interchange is projected to have approximately 15% of its traffic generated by the shift in land use that occurs under the New South Interchange Land Use Scenario.



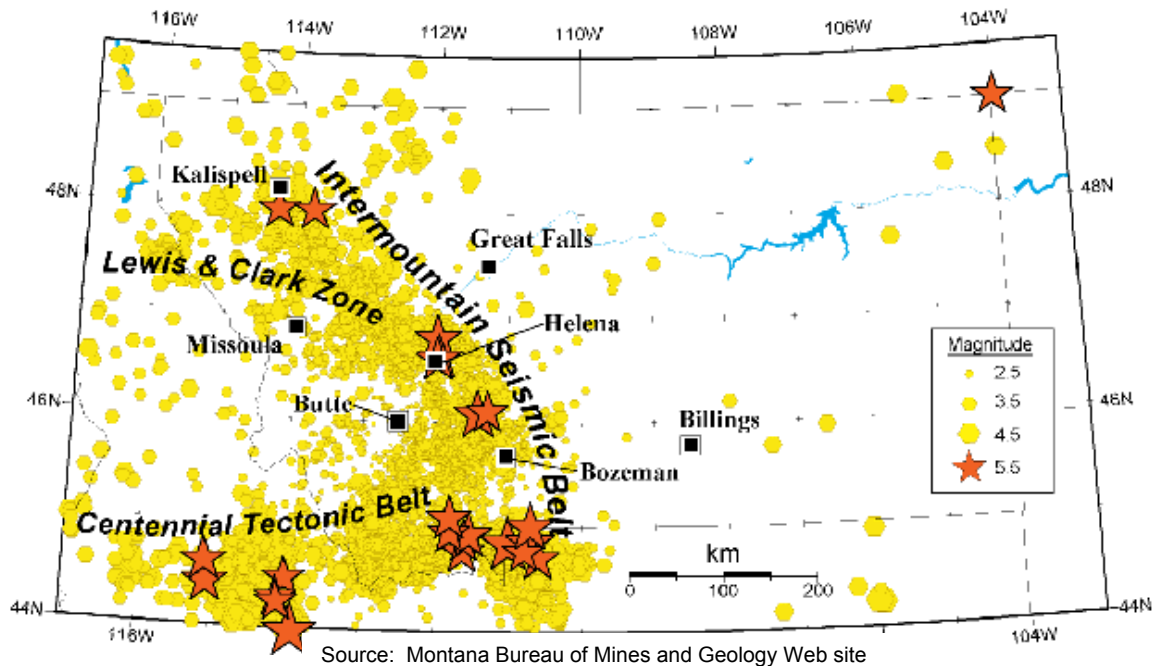
Interchange Utilization Related to Alternative Land Use Scenarios

Figure 3-6

3.3 Seismic Concerns in the Study Area

The I-15 study area falls within the Intermountain Seismic Belt. As shown in **Figure 3-7**, this belt starts in northwestern Montana near Flathead Lake and extends southwards, through Helena, towards Yellowstone National Park, along the Idaho/Wyoming border and finally through Utah and into Nevada. In Montana this belt is up to 100 km (62 miles) wide. One branch of this belt, the Centennial Tectonic Belt, extends from Yellowstone National Park through southwest Montana and into Central Idaho. The I-15 study area is in this belt. Although it has been over 40 years since the last destructive seismic event in Montana, approximately 7 to 10 low magnitude earthquakes per day are recorded in the state.

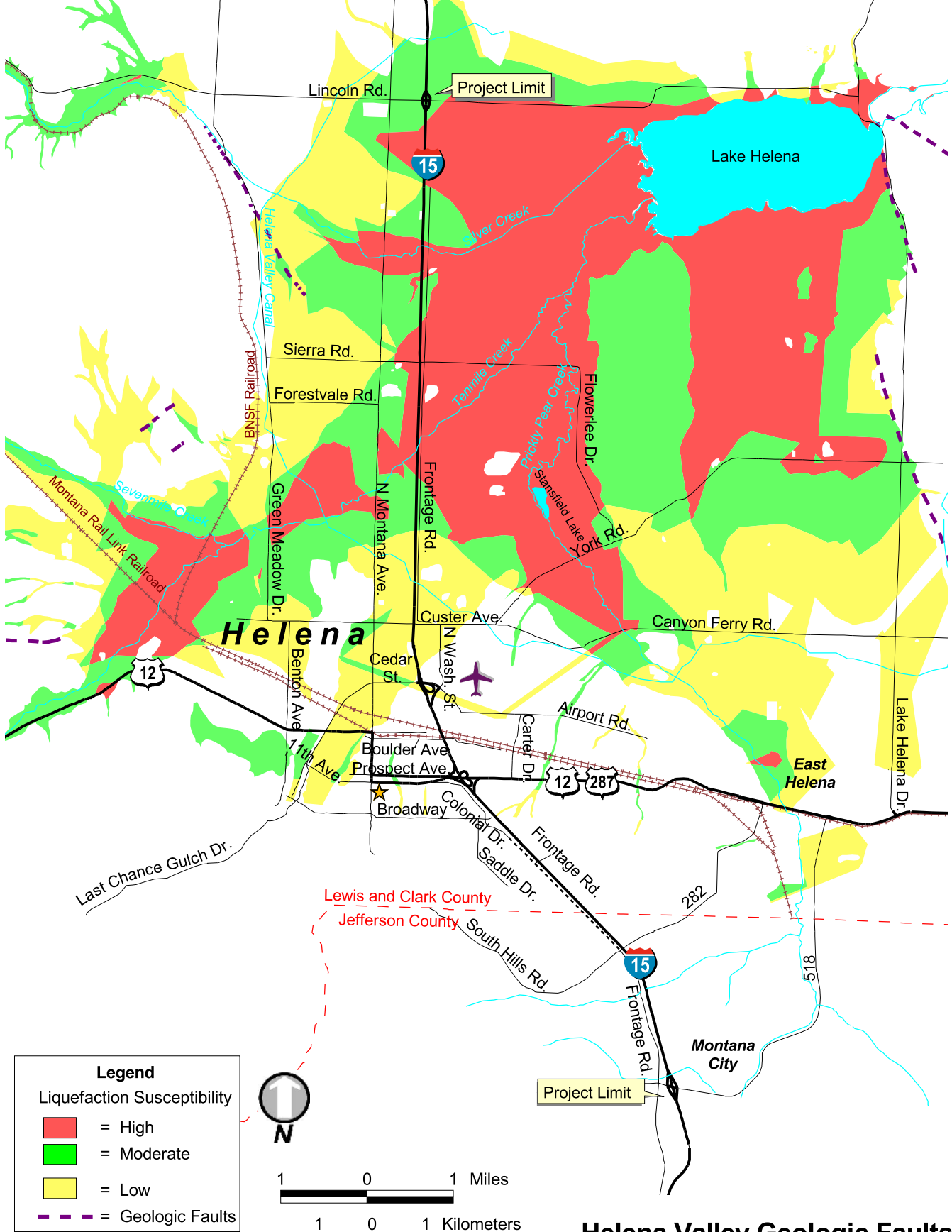
Figure 3-7
Intermountain Seismic Belt



According to fault maps there are numerous known faults in the Helena area. These known faults have slipped to produce earthquakes in the last 1.6 million years.

Figure 3-8 shows that there are a number of faults around Helena, but none cross the I-15 Corridor until north of Lincoln Road.

According to the American Association of State Highway and Transportation Officials (AASHTO) classification system, highway and transportation structures in this area are in the Seismic Performance Category B. This category requires that all structures be



Helena Valley Geologic Faults and Liquefaction Susceptibility

Figure 3-8

designed using a complex analysis which includes modeling superstructure elements, connections to the substructure, and the actual soil conditions at each structure location. For commercial structures, the city of Helena has adopted the 1997 *Uniform Building Code's* (UBC) Seismic Zone 3 designation.

MDT's structures within this corridor study are in a moderately active seismic zone. MDT's earthquake rating process identifies and rates bridges based on structural vulnerability to collapse and importance as a lifeline structure. **Table 3-6** identifies the current ratings for the structures within this corridor study.

This segment contains the second highest rated structure within the state highway system (I00015192+0694 1+2). Research shows that structures with ratings above 40 generally require extensive seismic retrofit to prevent collapse during a seismic event.

Table 3-6
Rating of I-15 Corridor Study Structures

| Structure Number | Description | EQ Rating | Comment |
|------------------|--|-----------|-------------------------|
| S00518000+00001 | Montana City Interchange | 41 | |
| L22926001+05001 | Interstate overpass one mile North of Montana City | 38 | |
| P00008046+12211 | Capital Interchange EB | 43 | |
| P00008046+12212 | Capital Interchange WB | 44 | |
| I00015192+06941 | Over Montana Rail Link NB | 62 | |
| I00015192+06942 | Over Montana Rail Link SB | 62 | |
| U5807001+0.823 | Cedar Street Interchange | NR | New structure—not rated |
| U05802002+04741 | Custer Avenue overpass | 45 | |
| I00015196+01921 | Tenmile Creek NB | 21 | |
| I00015196+01922 | Tenmile Creek SB | 21 | |
| I00015197+00391 | Sierra Road NB | 30 | |
| I00015197+00392 | Sierra Road SB | 30 | |
| S00279000+00001 | Lincoln Road Interchange | 42 | |

One concern raised in the public and agency scoping process was soil liquefaction. Bridge structures and other highway-related structural elements must be designed to resist earthquake motions and the resulting forces applied to the structure. Liquefaction can occur during an earthquake and is defined as a condition in which water-saturated soil temporarily loses strength and acts as a fluid. Liquefaction takes place when the relatively low water pressure in saturated soil is increased during an earthquake allowing soil particles to move with respect to each other. Liquefaction reduces the strength of the soil, and decreases the ability of the soil to support foundations for bridges and buildings.

The general soil characteristics in the Helena area include some that could lead to liquefaction during an extreme seismic event. The liquefaction susceptibility shown in **Figure 3-8** is based on water table elevations and regional soil characteristics. The likelihood of liquefaction increases the closer the area in consideration is to Lake Helena and to the Tenmile Creek drainage. This information shows that the area of risk includes the I-15 Corridor from the city center of Helena northward past Lincoln Road. During the series of earthquakes in 1935 there was no report of liquefaction within Helena, but there was evidence of it near Lake Stansfield. Lake Stansfield is located northeast of Helena, about 1.6 kilometers (1 mile) east of I-15.

3.4 Transportation

This section describes the existing transportation conditions along I-15 in the study area. It includes transportation plans reviewed, existing roadway and traffic conditions, existing public transit conditions, existing private transit conditions, planned and programmed transit improvements, pedestrian and bicycle facilities, railroad operations, and air operations.

3.4.1 Transportation Plans and Policies

Transportation plans reviewed in preparing the EIS are summarized below.

- ▶ *Helena Area Transportation Plan, 1993 Update*, prepared by Robert Peccia & Associates. This plan was prepared for the city of Helena and Lewis & Clark County to address the short- and long-term needs of the transportation planning area consisting of Helena, East Helena, and the surrounding area of Lewis & Clark County from the Jefferson County line to Lincoln Road. The document contains an analysis of the overall transportation system in the area, a list of recommended transportation improvements, a financial analysis that identifies potential funding sources for transportation improvements, and a strategy for implementing recommended improvements.

The plan identified several issues and concerns expressed by the public. These include traffic safety, congestion on arterial routes, problems and delays associated with the railroad crossings, a lack of adequate pedestrian and bicycle facilities, access and parking problems in the downtown area, and lack of sufficient interstate access.

Based on the above public concerns, the plan recommends 22 major improvements, 42 Transportation System Management (TSM) recommendations, 7 improvements in downtown Helena, and 19 improvements to bicycle facilities. Many of the roads identified are those that will have major capacity problems as

traffic volumes increase from 1990 to 2010. Existing roads crossing I-15 were identified as needing improvements.

The plan also recommended several Transportation Demand Management (TDM) projects including improvement of the sidewalk system, employer-based ride-sharing, pedestrian and bicycle safety and education, preparation of a bicycle and trail map, increased parking, development of park-and-ride lots, expansion of local transit, promotion of telecommuting, public education on transportation alternatives, a TDM review process, and a financial set-aside for funding TDM programs.

- ▶ *The Greater Helena Area 2001 Transportation Development Plan Update 2001* was prepared for Helena's Dial-A-Ride Bus service by Robert Peccia & Associates. This plan examines all existing transit services in the greater Helena area though it primarily focuses on the Helena Dial-A-Ride system. While Dial-A-Ride provides an essential service for the community, major deficiencies exist. According to the plan, portions of the greater Helena area are without any public transit, there is no weekend or evening public transit service, the system is underutilized and understaffed, and existing facilities do not meet the current or future needs of the system. The plan developed 12 short- and long-term recommendations for improving the system and meeting the needs of the community.
- ▶ The *2003-2005 Statewide Transportation Improvement Program (STIP)* was prepared by MDT in December 2002 under the Transportation Equity Act for the 21st Century (TEA21) of 1998. The current STIP shows how funds will be used to meet Montana's transportation needs for fiscal year 2003 through 2005. Several highway projects in and around Helena will receive funding for various types of improvements, from maintenance and safety improvements to reconstruction. Federal operating and capital assistance funds will be provided for Helena Dial-A-Ride and West Mont, a non-profit health organization.
- ▶ *Lewis & Clark County Comprehensive Draft Plan 2000* discusses major transportation issues in the county, with those being safety, maintenance, alternative modes of transportation, Transportation Demand Management, and funding. The county incorporated portions of the *Helena Area Transportation Plan-1993 Update* into their plan. Five transportation goals identified in the plan are:
 - ◇ Maintain and improve the condition and operational level of service of the existing road system.
 - ◇ Identify and protect future road corridors to serve future developments and public lands.
 - ◇ Facilitate construction of roads to serve developing areas.

- ◇ Establish accessibility guidelines to provide adequate access for emergency services to residents of the county.
- ◇ Establish safe pedestrian and bicycle access in designated areas of the county as part of the non-motorized circulation system.
- ▶ The *Helena Regional Airport—Airport Capital Improvement Plan* identifies major improvement projects to be constructed between 2002 and 2006. Example projects include terminal remodel and expansion, taxiway construction and reconstruction, and access road and parking improvements.

3.4.2 Existing Roadway and Traffic Conditions

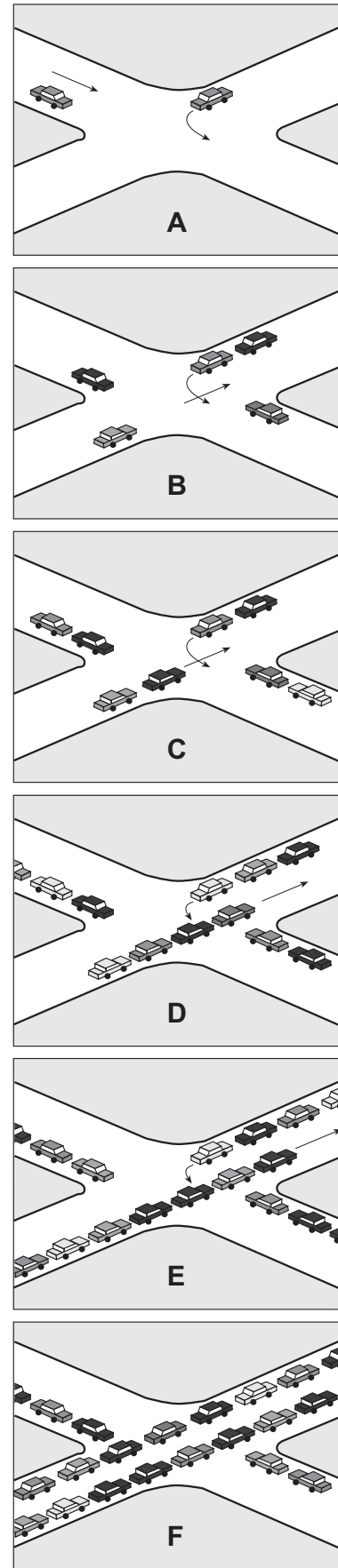
I-15 is part of the Eisenhower Interstate Highway System and is an element of the National Highway System (NHS). The NHS carries 75% of heavy truck traffic in the United States and is intended to help sustain economic strength and enhance the country's competitiveness in the global marketplace. I-15 through Helena is also on the designated route of the CANAMEX Trade Corridor, one of the 44 congressionally named high-priority trade corridors on the NHS. Existing roadway and traffic conditions along the interstate and east-west roadways crossing I-15 are discussed in this section.

3.4.2.1 Traffic Volumes and Congestion

Level of Service (LOS) is a qualitative measure of traffic operations on a roadway segment or at an intersection. LOS is described similar to letter grades, where LOS A and B represent very good traffic operations with generally free flowing traffic and little congestion. LOS C and D represent the early phases of congested roadways or delays at intersections. LOS E and F describe traffic operations at or over the capacity of the roadway segment or interchange, usually resulting in serious congestion and delays. **Figure 3-9** and **Figure 3-10** provide graphic descriptions of levels of service at intersections and on roadways. Throughout the state of Montana LOS B is the MDT minimum acceptable standard for interstate highways in both rural and urban areas. **Figure 3-11** and **Figure 3-12** illustrate existing (year 2001) daily traffic volumes and operations and forecasted No-Action traffic volumes and operations for the year 2025. **Figure 3-13** and **Figure 3-14** show 2001 levels of service throughout the study area and the anticipated LOS in year 2025. **Figure 3-14** represents traffic and operational conditions expected to occur in year 2025 if no major transportation improvements are made in the study area. Currently, the most congested places in the study area are found on the west side of I-15 at the Cedar Street interchange and the Capitol interchange. Most other intersections in the study area as well as the entire interstate highway operate at LOS A or B. In the future, reduced levels of service are anticipated at every interchange location, including several intersections with cross streets or ramps that are anticipated to operate at

LOS Intersections

- A** No vehicle waits longer than one signal indication.
- B** On a rare occasion, vehicles wait through more than one signal indication.
- C** Intermittently, vehicles wait through more than one signal indication, occasionally backups may develop, traffic flow still stable and acceptable.
- D** Delays at intersections may become extensive, but enough cycles with lower demand occur to permit periodic clearance, preventing excessive backups.
- E** Very long queues may create lengthy delays.
- F** Backups from locations downstream restrict or prevent movement of vehicles out of approach creating a "gridlock" condition.

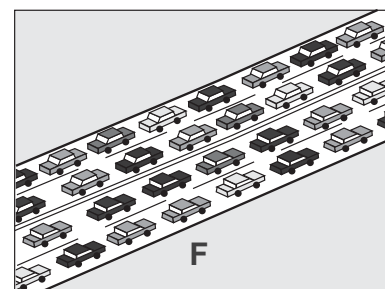
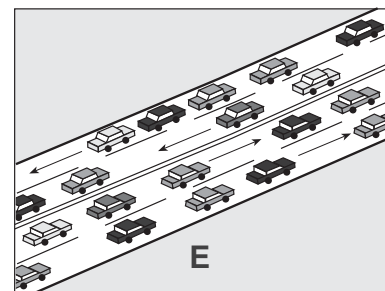
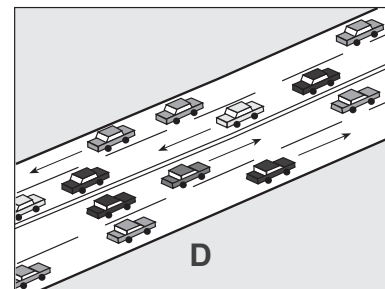
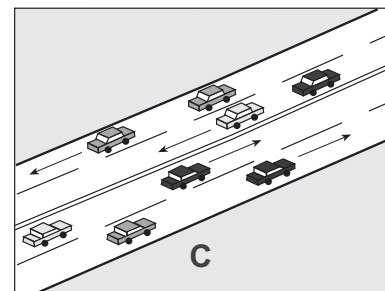
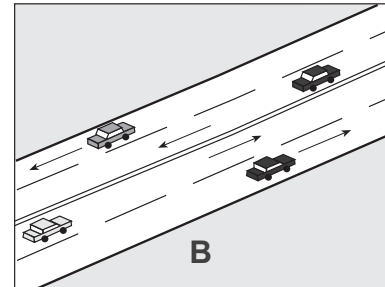
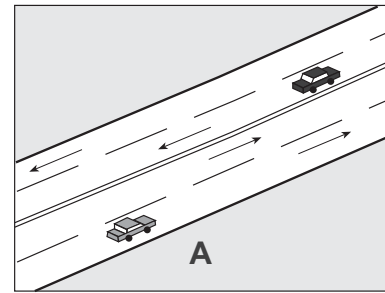


Source: Highway Capacity Manual

Level of Service at Intersections

Figure 3-9

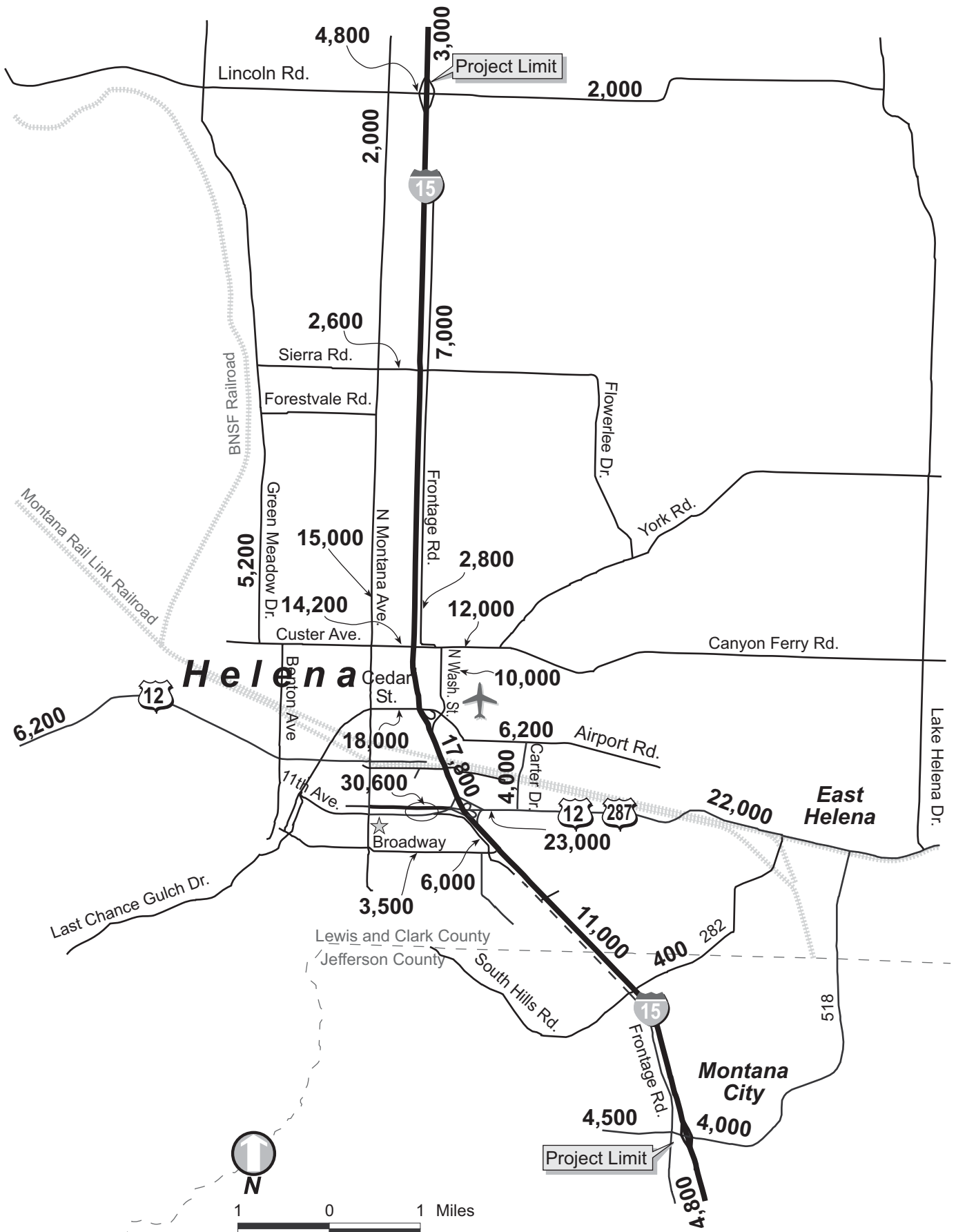
| LOS | Roadway Segments |
|-----|--|
| A | Free flow, low traffic density |
| B | Minimum delay, stable traffic flow |
| C | Stable condition, movements somewhat restricted due to higher volumes, but not objectionable for motorists |
| D | Movements more restricted, queues and delays may occur during short peaks, but lower demands occur often enough to permit clearing, preventing excessive backups |
| E | Actual capacity of the roadway involves delay to all motorists due to congestion |
| F | Forced flow with demand volumes greater than capacity resulting in complete congestion |



Source: Highway Capacity Manual

Level of Service along Roadways

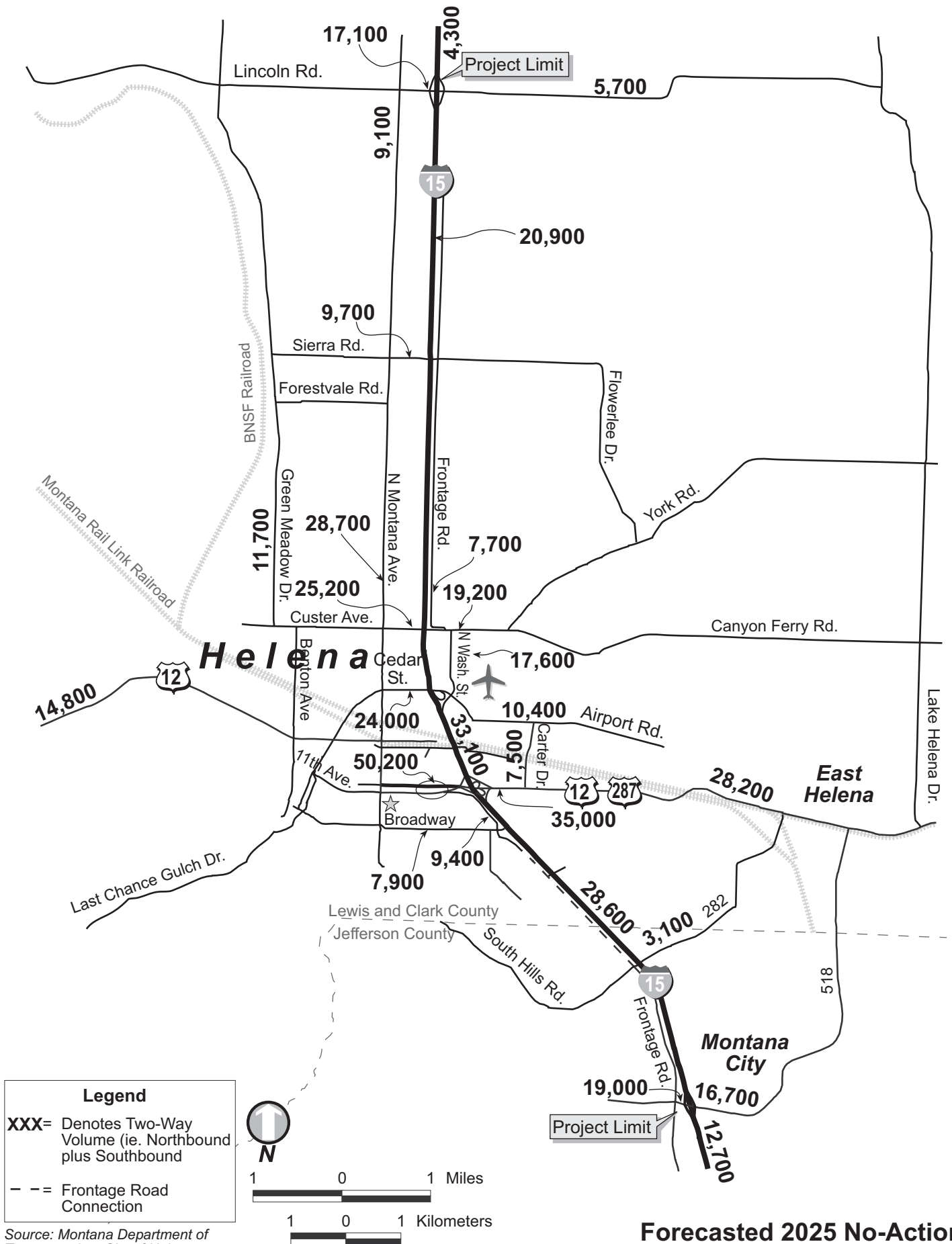
Figure 3-10

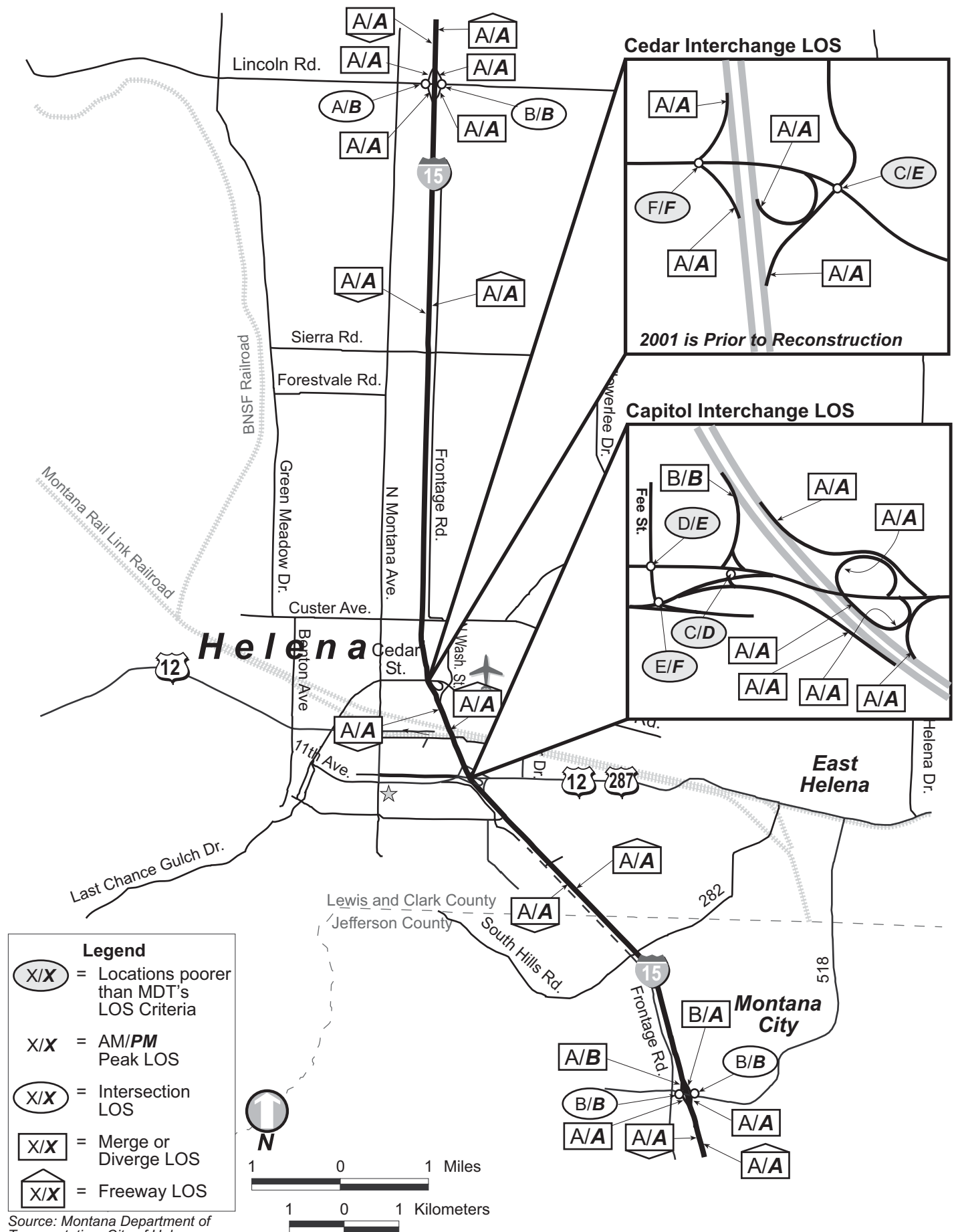


Source: Montana Department of Transportation, City of Helena

2001 Average Weekday Traffic Volumes

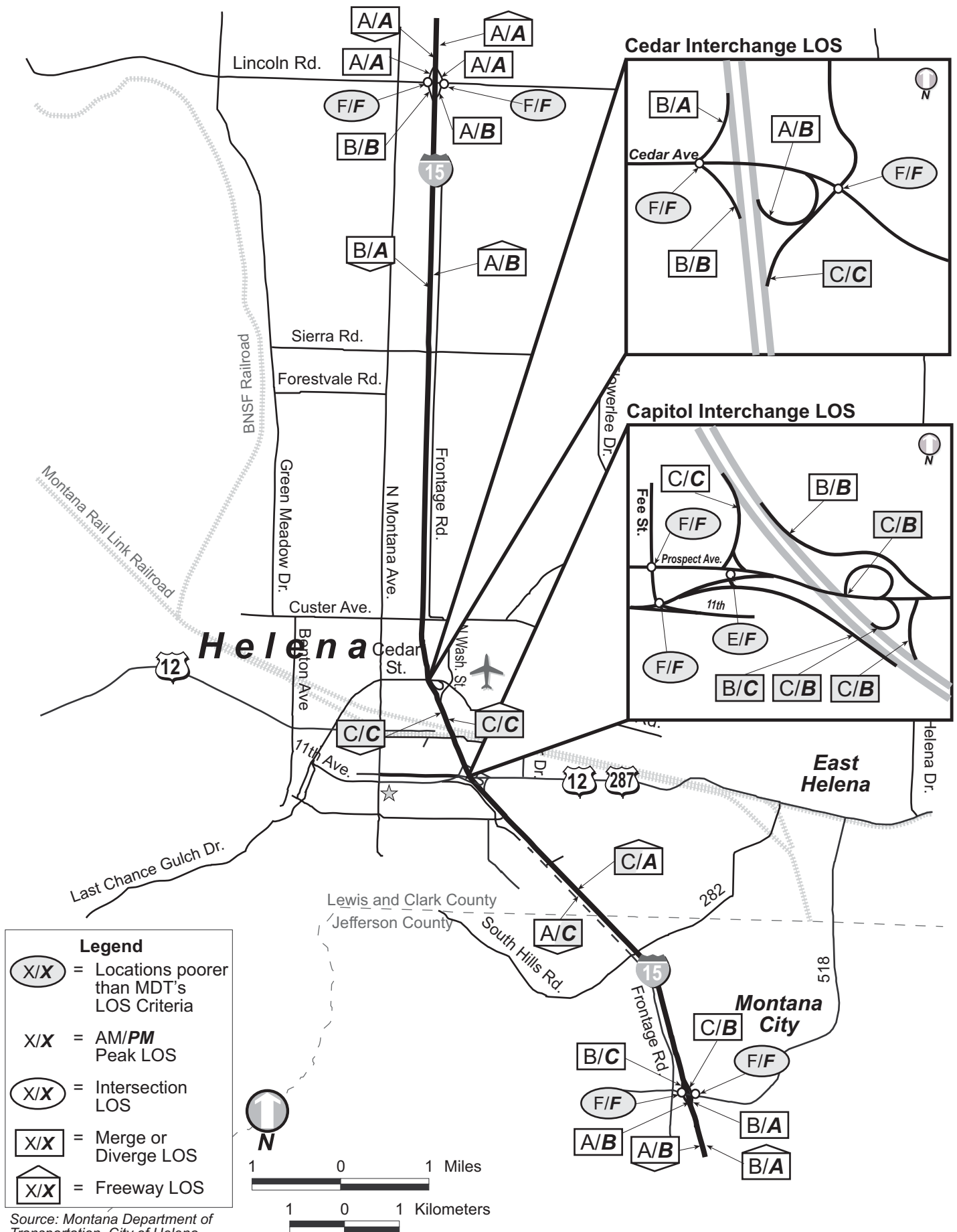
Figure 3-11





Existing (2001) Levels of Service

Figure 3-13



Forecasted 2025 No-Action Levels of Service

Figure 3-14

LOS F. On the interstate itself, level of service C is projected between Cedar Street and the Montana City interchange.

3.4.2.2 Emergency Vehicle Issues

The Helena fire department and police department have identified difficulties in providing emergency services because of I-15. Interviews with other emergency service providers in Jefferson and Lewis & Clark Counties reflect similar concerns. I-15 is one of the principal facilities used for emergency access within the study area and for regional access to St. Peter's Hospital, but its usefulness is constrained because of the limited number of interchanges. Serving areas east and north is becoming a problem. Currently, there is no direct access from I-15 to the West Valley Fire Station #1 located at Foresvale and N. Montana Avenue. The overall response rate from the police department is good except for times when they have to cross I-15. They informally refer to I-15 as "The Great Wall" because of frequent congestion at the interchanges and crossings.

Emergency service providers have identified a need for additional access to I-15, improved or additional east-west arterials to cross the interstate and improved access to and from the hospital. The Custer Avenue overpass at I-15 seems particularly narrow and congested to the police department. The fire department also identified a problem using N. Montana Avenue because of potential delays resulting from train blockages.

3.4.2.3 Crash Analysis

Analysis of crash data for the past five years indicates there are areas along I-15 where crashes frequently occur, primarily at interchange ramp merge/diverge locations. As projected traffic volumes continue to increase, it is likely that the number of crashes will also increase.

One indication of the safety of a roadway is its total crash rate. Total crash rate is a measure of the total number of crashes per million vehicle miles of travel (MVM). MDT calculated a statewide rural interstate crash rate of 1.16 crashes per MVM from 1996 to 2000. Because of the small total urban area within the state, MDT does not record a statewide urban interstate crash rate.

The crash rate for I-15 within the study area from 1996 to 2000 was 1.52 crashes per MVM. This rate is 31% higher than the statewide rural interstate crash rate of 1.16 crashes per MVM during the same time period. The higher crash rate is not unexpected since the entire central portion of the study area lies within the more heavily traveled Helena city limits.

Within the study area, I-15 is utilized by motorists for local trips, as well as by local commuters with close destinations. I-15 is the major north-south route east of Helena and local traffic commonly utilizes the interstate highway for short trips. This results in a higher number of slower vehicles intermixing with the faster through traffic near the on-and off-movements at interchanges. This has resulted in higher incidences of crashes at interchange locations within the study area. Consequently, the crash rate along I-15 in Helena is higher than the crash rate along adjacent more rural sections of the roadway.

As shown in **Table 3-7**, during the period of July 1996 to June 2001, there were 336 crashes that occurred along I-15 within the study area. Of these crashes, 113 included injuries. There were no fatalities.

Table 3-7
Crash Data Summary

| # of Crashes | Location RP (1) | Road Conditions | | | Lighting Conditions | | | Injury Crashes | Fatality Crashes | Crash Cause/Type | | | | | |
|--------------------------|--------------------|-----------------|------------|-----------|---------------------|-----------|-----------|----------------|------------------|------------------|--------------------------|--------------|-----------|---------------|-----------|
| | | Wet | Dry | Icy/Snow | Day | Night | Dawn/Dusk | | | Animal | Bridge Rail/Guardrail | Fixed Object | Overturn | Other Vehicle | Other |
| 40 | 187.0-187.9(2) | 4 | 22 | 14 | 17 | 19 | 4 | 11 | 0 | 12 | 5 | 7 | 3 | 8 | 3 |
| 20 | 188.0-188.9 | 2 | 14 | 4 | 8 | 12 | 0 | 5 | 0 | 10 | 1 | 1 | 5 | 3 | 0 |
| 26 | 189.0-189.9 | 0 | 15 | 11 | 15 | 11 | 0 | 8 | 0 | 11 | 0 | 2 | 3 | 9 | 1 |
| 18 | 190.0-190.9 | 0 | 14 | 4 | 11 | 6 | 1 | 5 | 0 | 7 | 1 | 0 | 2 | 5 | 3 |
| 21 | 191.0-191.9 | 1 | 17 | 3 | 13 | 8 | 0 | 7 | 0 | 5 | 2 | 1 | 5 | 7 | 1 |
| 84 | 192.0-192.9(3) | 8 | 50 | 25 | 56 | 24 | 3 | 33 | 0 | 1 | 11 | 4 | 7 | 57 | 4 |
| 55 | 193.0-193.9(4) | 4 | 40 | 11 | 45 | 7 | 3 | 17 | 0 | 2 | 4 | 6 | 9 | 31 | 3 |
| 9 | 194.0-194.9 | 1 | 3 | 5 | 7 | 2 | 0 | 3 | 0 | 1 | 4 | 1 | 1 | 2 | 0 |
| 7 | 195.0-195.9 | 0 | 4 | 3 | 3 | 4 | 0 | 4 | 0 | 1 | 1 | 1 | 2 | 0 | 2 |
| 15 | 196.0-196.9 | 0 | 11 | 4 | 10 | 3 | 2 | 7 | 0 | 5 | 2 | 0 | 2 | 3 | 3 |
| 9 | 197.0-197.9 | 0 | 8 | 1 | 4 | 4 | 1 | 2 | 0 | 4 | 0 | 1 | 2 | 2 | 0 |
| 7 | 198.0-198.9 | 1 | 6 | 0 | 4 | 3 | 0 | 1 | 0 | 3 | 0 | 0 | 2 | 0 | 2 |
| 4 | 199.0-200.0 | 0 | 4 | 0 | 2 | 2 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 2 |
| 21 | 200.0-200.1(5) | 1 | 17 | 3 | 12 | 7 | 2 | 9 | 0 | 0 | 5 | 0 | 1 | 15 | 0 |
| 336 Total Crashes | | 22 | 225 | 88 | 207 | 95 | 16 | 113 | 0 | 62 | 36 | 26 | 44 | 142 | 24 |

Source: MDT crash data from July 1996 to June 2001.

Note: Crash data was not complete for every entry. Figures do not necessarily add up to the total number of crashes.

- (1) Reference posts are shown on Figure 1-2
- (2) This section of I-15 includes the Montana City interchange
- (3) This section of I-15 includes the Capitol (US 12) interchange
- (4) This section of I-15 includes the Cedar Street interchange
- (5) This section of I-15 includes the Lincoln Road interchange

3.4.3 Existing Public Transit Conditions

Existing public transit is limited in Helena and the surrounding area due to Montana's and the region's relatively low population numbers and density. However, several services are available to residents in and around Helena, including one public system (Dial-A-Ride), several private charter or taxi services, and several non-profit providers serving specific clientele.

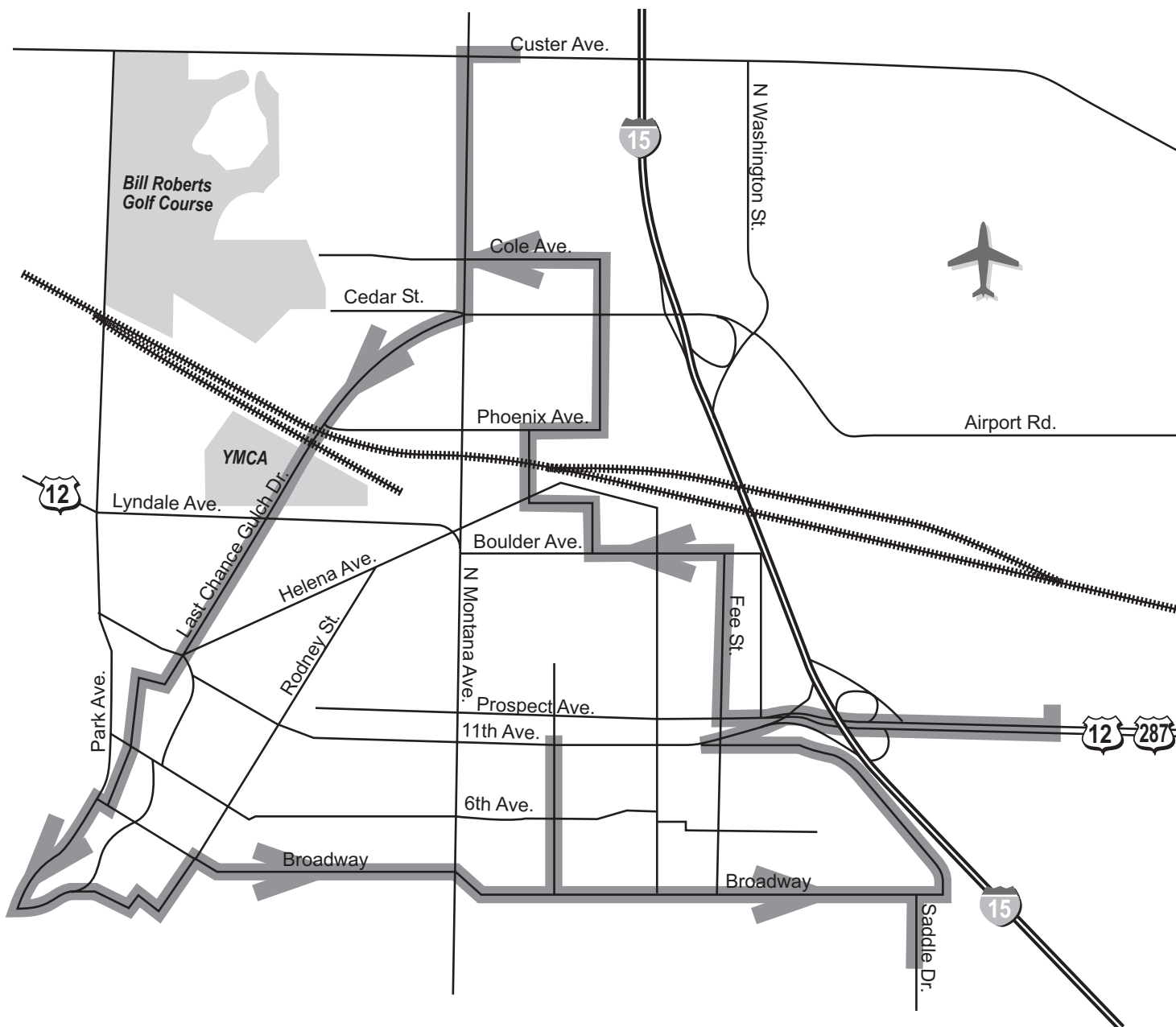
The recent *Greater Helena Area 2001 Transportation Development Plan Update* was the primary source for the information provided in this section. Additional transportation discussions can be found in the Lewis & Clark County *Comprehensive Draft Plan*, January 2000 and the *City of Helena Growth Policy Plan, 2001*. The discussions in these two documents were based on the previous *Transportation Development Plan* completed in 1996 of which the 2001 version is an update primarily focusing on the Helena Dial-A-Ride system.

The Helena Dial-A-Ride has been in operation since 1979. Service is provided through a fixed-route "Checkpoint" service and a demand responsive system consisting of a door-to-door van that serves all areas within the city limits, except for a few areas where narrow steep streets cannot be negotiated. Dial-A-Ride does not operate on holidays or weekends.

Checkpoint provides service for riders within the Helena area. The Checkpoint bus has 16 pre-designated bus stops and three call-in-only stops. Operating hours for this bus system are from 7:00 a.m. to 6:00 p.m., Monday through Friday. The bus travels in a counterclockwise direction through Helena (see **Figure 3-15** for the Dial-A-Ride route).

The door-to-door system runs from 7:00 a.m. until 5:00 p.m., Monday through Friday. Next-day notice is necessary to schedule a ride and passengers can call between the hours of operation to schedule a ride. Passengers who board and depart from within the same zone will experience a total travel time of less than thirty minutes. Passengers who board in one zone and depart in another can have travel times up to sixty minutes.

The cost of the door-to-door service is \$1.50; \$0.85 for seniors. The cost for Checkpoint is \$1.00. In 2000 Dial-A-Ride provided 37,294 rides. **Figure 3-16** shows a breakdown of ridership by elderly, disabled and passengers under 60 years old. Because of the low ridership, there is a higher cost per passenger.



Legend

 = Dial-A-Ride

Source: The Greater Helena Area
2001 Transportation Development
Plan Update, Robert Peccia &
Associates, Helena, MT, 2001

INTERSTATE 15 CORRIDOR
Montana City to Lincoln Road

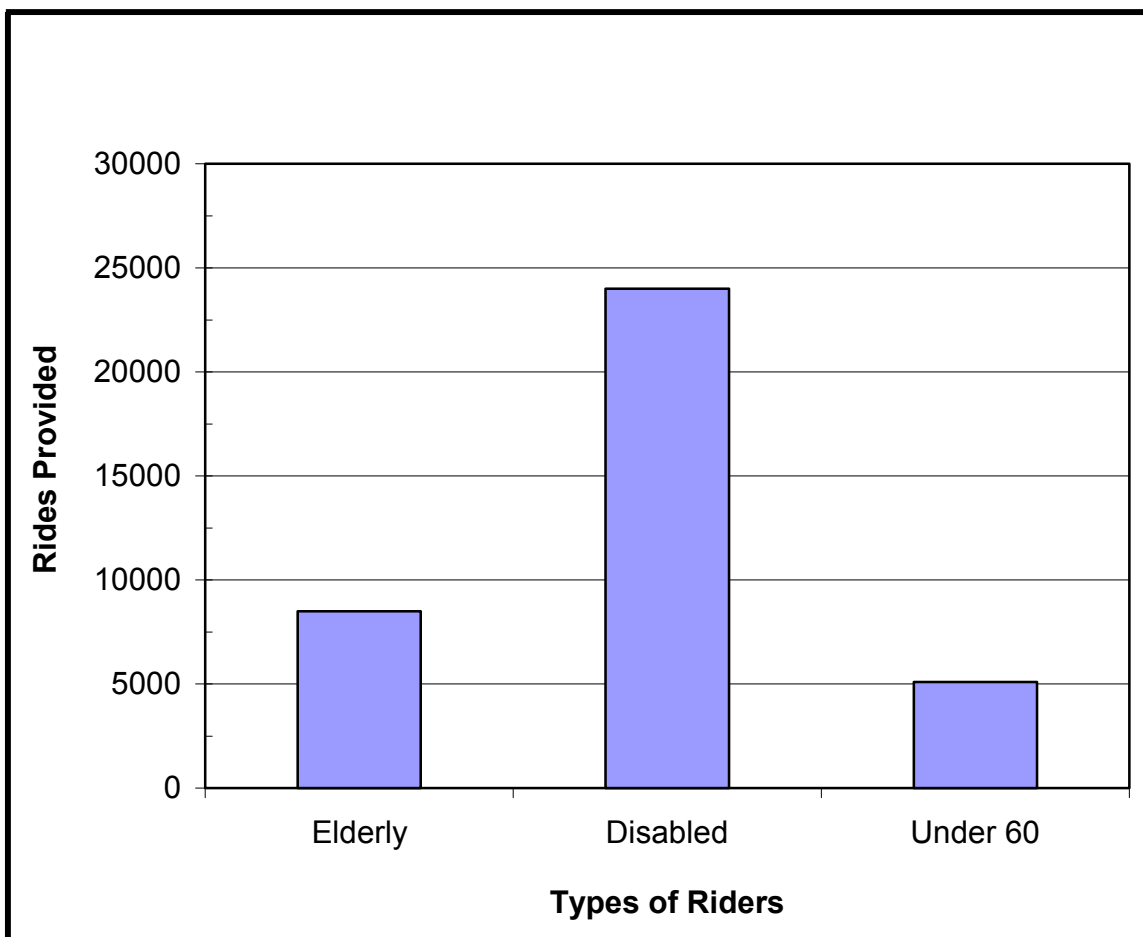
Carter-Burgess

Dial-A-Ride Route

Figure 3-15

In addition to the Helena Dial-A-Ride, there are also specialized transportation systems offering services to the elderly, disabled or disadvantaged riders. These systems are run by non-profit programs in order to help clients reach available resources. These include the Rocky Mountain Development Council, Spring Meadow Resources, West Mont Habilitation Services, and the Department of Public Health and Human Services Public Assistance Program.

Figure 3-16
Dial-A-Ride
Year 2000 Ridership Breakdown



Source: *The Greater Helena Area 2001 Transportation Development Plan Update*, by Robert Peccia & Associates

A free trolley system, run by merchants, was established in downtown Helena in May 2001. The trolley runs in a loop through downtown Helena with twelve designated stops. Hours of operation are Monday through Saturday from 10:30 a.m. until 6:00 p.m., with service extended until 8 p.m. on Wednesdays. The trolley provided approximately 80 rides per day in its first year of operation.

Other bus service providers are G&L Transit and Rimrock Stages. G&L Transit is a charter bus company offering service between Helena and Butte. Rimrock Stages is located in Billings and operates two scheduled buses through Helena each day to connect to Bozeman, Billings, and Missoula.

MDT had offered a vanpool for their employees along three routes. The program began in 1978 and ceased operation at the end of 2002. General routes include one west into Helena, the valley route to the north, and the East Helena route. Ridership on the vanpool was utilized by approximately 16 passengers.

3.4.4 Existing Private Transit Conditions

Private transit has been provided by Capitol Taxi since 1982 and is Helena's only taxi service. With a fleet of seven vehicles, Capitol Taxi provides between 130 and 140 rides each day. During the day people traveling to and from work primarily use it. There is also an "Alert Cab" service offered by participating bars, which offers customers in need a ride to their destinations.

3.4.5 Planned and Programmed Transit Improvements

In the *Helena Area Transportation Plan, 1993 Update*, recommendations from public surveys included general support of public transit. Survey results indicated that a fixed route public transit system would be "desirable" to 56% of the local residents.

According to the Montana Rural Passenger Needs Study (MRPNS) conducted by MDT in March 2001, the study area has a large amount of unmet transit needs. Lewis & Clark County is currently providing 8% of its probable transit needs with government supported services. Jefferson County is currently not providing any transit operations. Additionally, the transit demand is less than 10% of the demand in Lewis & Clark County.

The *Greater Helena Area 2001 Transportation Development Plan Update* also identified a number of transit system deficiencies including:

- ▶ No weekend or evening Dial-A-Ride service.
- ▶ Dial-A-Ride does not meet current or future needs of the system.
- ▶ No transit service is offered outside of the local city limits.
- ▶ Current city transit system fails to meet the needs of special interest organizations which is the reason these groups choose to operate their own transit systems.

The *Greater Helena Area 2001 Transportation Development Plan Update* identified a management alternative in order to address transit needs and put improvements in place. The goal of this alternative is to expand the transit system to include areas outside the city limits as well as expanding the existing system within Helena. This decision would require a cooperative effort between the cities of Helena, East Helena and both Lewis & Clark and Jefferson Counties. Short-term recommendations include:

- ▶ Developing an aggressive marketing plan for Dial-A-Ride in order to increase ridership.
- ▶ Increase the Dial-A-Ride fares to offset increasing operational costs.
- ▶ Incorporate Downtown Trolley into Dial-A-Ride and provide year round service.
- ▶ Upgrade Dial-A-Ride facilities on Main Street.
- ▶ Encourage increased carpooling within the Helena Area.
- ▶ Operate the Checkpoint route in both directions.
- ▶ Expand the service hours of the Dial-A-Ride system.
- ▶ Implement transit service between Helena and East Helena.
- ▶ Encourage carpooling and ridesharing from Jefferson County.

Long-term recommendations include:

- ▶ Expand the Dial-A-Ride service to a limited area within Lewis & Clark County.
- ▶ Implement transit service between Helena and the Helena Valley.

3.4.6 Pedestrian and Bicycle Facilities

The 1990 census data revealed that 10.5% of Helena residents walk to work and 1.5% bicycle to work. According to *Census 2000* estimates, the number of people walking dropped to 9%, while the number of people bicycling dropped to 1.3%.

According to the *1993 Helena Transportation Plan*, pedestrian and bicycle activity in the Helena area is considerable. The downtown area, areas around schools, and major shopping centers attract a large number of pedestrians. There is an extensive system of hiking trails in Mount Helena City Park, which is utilized by many local residents. Young people and professionals use bicycles to commute to school and to work, not only on city streets in Helena but also along highways. Also, many residents bicycle for recreational purposes utilizing the Mount Helena and national forest mountain bike trail systems and the gravel roads of the South Hills. Most trails within the county are unpaved and are jointly acquired and maintained by the federal, state and county governments as well as the city of Helena.

Goals from area plans indicate a strong need for more pedestrian and bicycle facilities, more amenities for these facilities, and improved winter maintenance. Specific goals identified include:

- ▶ Improving facilities for the safe crossing of I-15, major arterials, and the railroad tracks.
- ▶ Implementing a comprehensive sidewalk installation policy.
- ▶ Providing opportunities for non-motorized travel in developed areas of the county, both paved and unpaved.
- ▶ Improving and dedication of new pedestrian and bicycle paths through developing areas when planning and designing new roads.
- ▶ Providing continuity within the existing system.
- ▶ Connecting the existing system to areas heavily used by pedestrians and bicyclists.
- ▶ Enhancing the safety of facilities to draw pedestrians and bicyclists from major thoroughfares.

3.4.6.1 Existing Facilities

Within the study area most of the cross-streets and the interchanges serving the interstate have limited or no accommodations for pedestrians and bicyclists. This issue was raised repeatedly during the public scoping process. The most frequently heard comment addressed the absence of safe places to cross over or under the interstate and the lack of roadway shoulders on the existing crossings. Many people expressed the concern that I-15 creates a major barrier to pedestrian and bicycle traffic flow.

The existing bridges over I-15, except for the recently reconstructed Cedar Street interchange bridge, were built with the freeway in the 1960s. Provisions such as sidewalks and shoulders for pedestrians and people riding bicycles were not standard design at that time. As a result, as population growth has occurred in the study area, there also has been an increase in the number of pedestrians and bicyclists crossing these bridges by using the traffic lanes. In addition, the guardrail on these overpasses does not meet current standards for pedestrian and bicycle traffic, which require a taller guardrail.

Bicycles are legally allowed to use the I-15 shoulder; however, the I-15 bridges over the railroad between the Cedar Street and Capitol interchanges do not have shoulders. This forces bicyclists using the interstate in this area to merge into the travel lanes while on these structures.

Information for existing pedestrian and bicycle facilities was gathered from several sources. This information was consolidated to present the existing facilities and the problems facing pedestrians and bicyclists within the study area. The following documents were utilized in preparing this section:

- ▶ *Comprehensive Park, Recreation and Open Space Plan, Volumes II and III, 1998*, prepared by JC Draggoo & Associates
- ▶ *Lewis & Clark County Comprehensive Draft Plan, January 2000*, prepared by Bucher, Willis & Ratliff
- ▶ *Helena Area Transportation Plan, 1993 Update*, prepared by Robert Peccia & Associates
- ▶ *City of Helena Growth Policy Plan, October 2001*

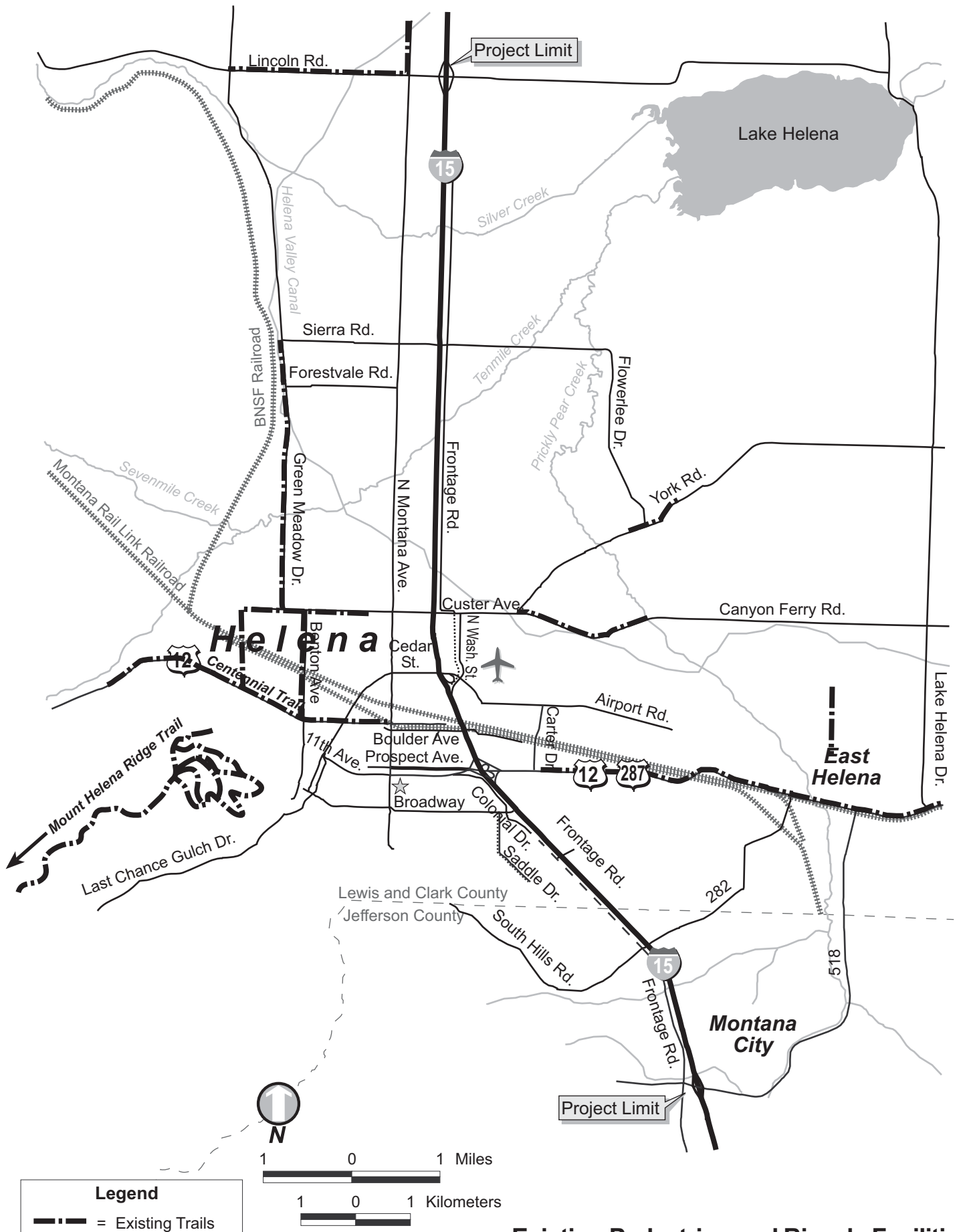
Throughout Helena there is a substantial lack of pedestrian and bicycle facilities from neighborhood sidewalks to on-street bike lanes. One of the more serious problems identified is the lack of facilities along primary arterial routes (notably sections of N. Montana and Prospect Avenues). This exposes pedestrians and bicyclists to large volumes of traffic traveling at considerable speed.

There is a shortage of adequate facilities to safely cross I-15 within the study area. With the current interchange configurations and levels of congestion, it is difficult for pedestrians and bicyclists to cross I-15 safely. Likewise, narrow county roads are problematic and dangerous for pedestrians and bicyclists and local routes are often not continuous, creating hazardous conditions for those trying to reach recreational or other areas.

Conditions are similar or worse in areas outside of Helena. There are minimal shoulders for pedestrians and bicyclists along most of the roads and highways in the county, forcing pedestrians and bicyclists to use portions of the travel lane. The Helena Valley has no means of pedestrian access and current pedestrian access is available on traveled roadways only.

One public concern raised in the *Helena Area Transportation Plan* was that a cohesive system of pedestrian trails is needed within the Helena Valley. Special mention was made of the lack of adequate routes on the interstate overpasses and the need for better winter maintenance of paths. Strong general support was voiced for prioritizing bicycle routes and pedestrian improvements.

Existing pedestrian and bicycle facilities consist of on-street bike lanes, separated bikeways, and off-street trails. The existing facilities are shown on **Figure 3-17**. Currently, within .8 kilometer (.5 mile) of I-15 two separated bikeways exist in Lewis & Clark County. One is along the north side of US 12 between Helena and East



Helena. The other is in the Jim Darcy School area along Lincoln Road and N. Montana Avenue.

Outside of the study area, in the Helena Valley, there are several facilities consisting of an on-street bike lane along a portion of Green Meadow Drive between Custer Avenue and Sierra Road; a separated bikeway in East Helena on a portion of Valley Drive; the off-street Mount Helena Ridge Trail; the Centennial Trail, an off-street trail west of N. Montana Avenue; on York Road between Birkland Drive and Tizer Drive; and on Canyon Ferry Road between Walter Drive and York Road.

Existing off-street pathways within the city limits are limited. Two off-street bicycle/pedestrian pathways have been constructed in the past ten years. The first is a 3-kilometer (2-mile) unpaved pathway connecting Centennial Park to Joslyn Street. The second path is paved and connects Henderson and Custer Avenues and provides an extension of the Benton Avenue path, including an interconnecting portion between Benton Avenue and North Main.

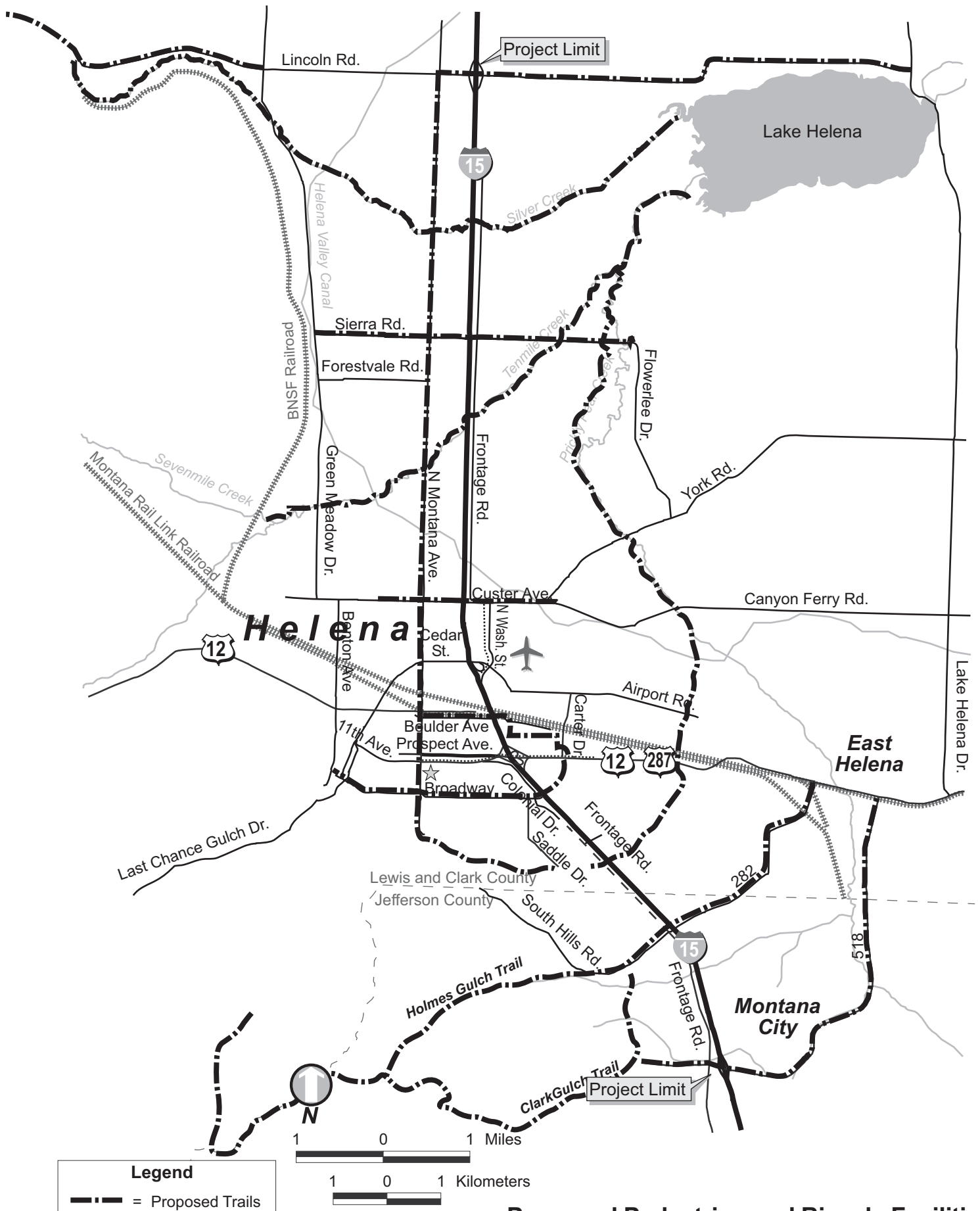
Gold Country Rails to Trails, a non-profit local organization recently completed the Spring Meadow Centennial Park Trail, connecting the two parks (Spring Meadow and Centennial) with the 3-kilometer (2-mile) trail mentioned above.

3.4.6.2 Proposed Facilities

A *Regional Trails Plan* was prepared as part of the three-volume parks plan. It identified the need for on-street lanes, off-street trails, and separated pathways, which includes both paved and unpaved trails. Most trail recommendations include off-street or separated bikeways. On-street trails are proposed for major thoroughfares that can be used for the purpose of commuting. The trails proposed in the plan and shown on **Figure 3-18** would provide linkages from the proposed on-street bikeways along the I-15 Corridor to the existing and proposed trail system southwest of Helena. Guidelines for trails and pathways were set forth in the plan.

All of these proposed facilities could be shared by pedestrians and bicyclists and would be located within Helena, Lewis & Clark County, and Jefferson County. While they are primarily for recreational purposes, they may help meet transportation objectives and connect with future routes used primarily for transportation purposes. Proposed trails that would access the study area and provide for safe crossing of I-15 include:

- ▶ Broadway—on-street bike lane west of I-15, off-street trail east of I-15.
- ▶ Lyndale Avenue—off-street trail along Lyndale crossing under I-15 along the railroad tracks, on-street bike lane east of I-15.
- ▶ Custer Avenue—on-street bike lane crossing I-15.



- ▶ N. Montana Avenue—on-street bike lane.
- ▶ Lincoln Road—on-street bike lane crossing I-15.
- ▶ SH 518—separated bikeway crossing at the Montana City interchange.
- ▶ Sierra Road—separated bikeway crossing I-15.
- ▶ Silver Creek Trail—off-street trail following Silver Creek to Lake Helena.
- ▶ Tenmile Creek Trail—off-street trail following Tenmile Creek to Lake Helena.
- ▶ Prickly Pear Creek Trail—runs parallel to I-15 to the east crossing I-15 near the proposed South Helena interchange.
- ▶ Holmes Gulch Trail—off-street trail south of Broadway on the west, separated bikeway on the east at SH 282.
- ▶ Centennial Trail—extension of off-street trail to I-15, on-street bike lane east of I-15.
- ▶ Clark Gulch Trail—separated bikeway at Montana City interchange traveling north to East Helena and connecting with US 12.
- ▶ Trail between Holmes Gulch and East Ridge-Prickly Pear Creek Trail—crosses I-15 and is an off-street trail west of I-15 and a separated bikeway east of I-15 into East Helena and connecting with US 12.

The city of Helena and Lewis & Clark County are currently developing a *Non-Motorized Plan* that will provide more specific recommendations, including the current recommendations from the Helena Area Linked Open Space (HALOS) Advisory Committee. A draft of the plan was completed in March 2003. No specific recommendations were part of the draft; however, the final will include these recommendations.

Through a series of public workshops and surveys taken in 2001 for the I-15 Corridor EIS, the public identified a number of bicycle improvements along the I-15 Corridor they felt were needed. These include:

- ▶ Adding bicycle accommodations to any bridges and overpasses along I-15.
- ▶ Adding bicycle accommodations for east/west access at Broadway and Prospect Avenue at I-15.

Meetings with the Jefferson County planners in early 2002 indicated that pedestrian and bicycle trails would be incorporated into new developments. The county will complete a bike trail plan after the comprehensive plan is completed. These plans are due to be completed by 2005. At the present time there is one existing trail that utilizes Highway 282.

3.4.7 Railroad Operations

Montana Rail Link (MRL) operates an east-west freight line from Billings to Missoula through Helena. An MRL rail yard and switching facility is located in the city of Helena on Railroad Avenue near Roberts Street (within 1.6 kilometers [1 mile] of I-15) that extends eastward under I-15. An 8-kilometer (5-mile) MRL branch line runs between East Helena and Montana City serving the Ash Grove Cement Plant.

The Burlington Northern-Santa Fe Railroad (BNSF) used to operate a freight rail line from the northwest corner of the city of Helena extending northward to Great Falls. This segment is no longer in service. BNSF interchanges with MRL in Helena.

No passenger rail service is available in the city of Helena or Lewis & Clark County. The nearest passenger service, provided by Amtrak, is in Shelby and Havre, Montana, approximately 269 kilometers (167 miles) north of Helena. Rimrock Stages provides bus service between the Shelby Amtrak station and Helena. The implementation of additional passenger service is unlikely in the foreseeable future.

In Jefferson County there is an abandoned rail line that runs between Butte and Helena. The bed of the rail line still exists. The *Jefferson County 1993 Comprehensive Plan* identified this route as having potential for future passenger rail service or for conversion to recreational trail use.

3.4.8 Air Operations

The Helena Regional Airport (HRA), located in Helena east of I-15, is the only airport in the county and serves several surrounding counties. The next nearest major airports are in Great Falls 142 kilometers (88 miles) to the north, Butte 103 kilometers (64 miles) to the south, Bozeman 155 kilometers (96 miles) to the southeast, and Missoula 185 kilometers (115 miles) to the west. The airport is administered by the Airport Authority, created by a joint resolution of the city and Lewis & Clark County. HRA is located within city limits and is served by city infrastructure. However, it is its own zoning district and is not under the jurisdiction of the city or the county. Primary access to the airport is via Cedar Street but may also be accessed via Custer Avenue. Commercial airlines, charter companies, and several air cargo operators have service in and out of HRA.

The commercial air carriers have experienced a 57% growth in local passenger boardings between 1990 and 2000 and are anticipating a 5% growth per year for the next several years. In 2000 the HRA completed runway improvements. A *Capital Improvement Plan* is currently available which identifies projects to be completed from 2002 to 2006. Projects include terminal remodel and expansion, airport

improvement, taxiway construction and reconstruction, and access road and parking improvements.

The airport also accommodates the Montana National Guard and the Rocky Mountain Emergency Service Training Center. Both have expanded their facilities in recent years.

3.5 Farmland

3.5.1 Existing Conditions

The Farmland Protection Policy Act of 1981 protects Prime and Unique farmland as identified by the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS). The purpose of this act is to minimize the extent to which federal programs contribute to the unnecessary and irreversible conversion of farmland to nonagricultural uses. It also assures that federal programs are administered in a manner that, to the extent practicable, will be compatible with government and private programs and policies to protect farmland.

The NRCS office in Helena was contacted to find out if any Prime or Unique farmland soils or farmland soils of statewide or local importance exist within 0.8 kilometer (0.5 mile) of the I-15 study area. The NRCS identified Prime farmland soils, if irrigated, within the study area. There are no soils along the I-15 Corridor classified as Unique farmland.

Prime farmland is defined as soil that has the best combination of physical and chemical characteristics for producing food, feed, fiber, forage, oilseed, and other agricultural crops with minimum inputs of fuel, fertilizer, pesticides, and labor, and without intolerable soil erosion. Unique farmland includes land that possesses the above characteristics, but is being used to produce livestock and timber. It does not include land already in or committed to urban development or water storage.

Farmland, other than Prime or Unique farmland, that is of statewide or local importance for the production of food, feed, fiber, forage, or oilseed crops, is determined by the appropriate state or local government agency or agencies.

Table 3-8 lists the protected soils that are located along the I-15 Corridor. **Figure 3-19** is a map showing the location of the soils that can be considered Prime farmland if irrigated, farmland of statewide importance, and farmland of local importance located along the I-15 Corridor. If an area is developed or is planned for development, it cannot be considered Prime farmland. Some farmland soils of state and/or local importance are located adjacent to the I-15 Corridor that are not currently in agricultural production.

Table 3-8
Protected Soils Located Within the Study Area

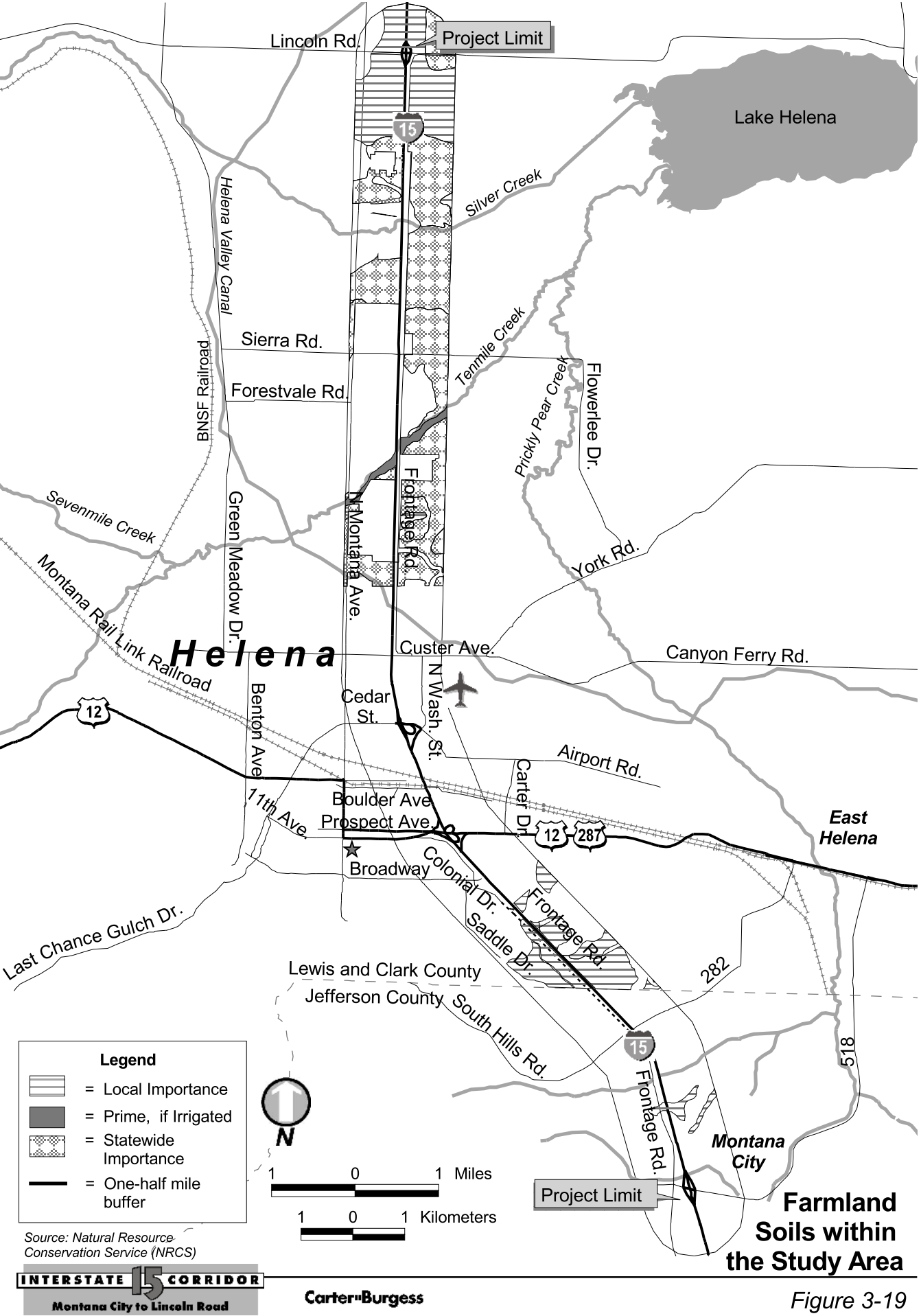
| Soil Type | Type of Farmland |
|--|----------------------------------|
| Ustic Torrifluvents, 0 to 4 percent slopes | Farmland of Statewide Importance |
| Fairway Silt Loam, 0 to 2 percent slopes | Prime Farmland, if irrigated |
| Rootel-Musselshell Loams, 2 to 8 percent slopes | Farmland of Local Importance |
| Musselshell-Crago Complex, 2 to 8 percent slopes | Farmland of Local Importance |
| Thess Loam, 0 to 2 percent slopes | Prime Farmland, if irrigated |
| Meadowcreek-Fairway Complex, 0 to 2 percent slopes | Prime Farmland, if irrigated |
| Thess-Scravo Complex, 0 to 2 percent slopes | Farmland of Local Importance |
| Villy Silt Loam, 0 to 2 percent slopes | Prime Farmland, if irrigated |
| Varney Cobbly Loam, 2 to 8 percent slopes | Farmland of Statewide Importance |

Source: U.S. Department of Agriculture, Natural Resource Conservation Service, Helena.

Agriculture is Montana's number one industry, and the state is ranked second nationally in farm and ranch acreage with 24.2 million hectares (59.7 million acres) in use. In 2000 the county agricultural production for both Lewis & Clark and Jefferson Counties is considered average compared to other counties in the state. According to the last agricultural census, which was in 1997, the top agricultural commodities for Lewis & Clark County (in descending order) were cattle and calves, hay crops (including alfalfa), nursery and greenhouse crops, wheat, and barley. For Jefferson County, the top commodities (in descending order) were cattle and calves, hay crops (including alfalfa), wheat, hogs and pigs, and barley. The next agricultural census information was conducted in 2002 with information made available to the public in late 2003.

3.6 Social Conditions

Traditionally agricultural, the valley has experienced suburbanization as the population of Helena has grown. The downtown core of Helena, main shopping areas, and older, denser residential neighborhoods are located west of I-15 in the valley north of the South Hills. Montana City, located in the South Hills, has experienced recent growth as more people who work in Helena choose to live in this rural community and commute to work. Much of the recent residential and commercial development in the unincorporated areas of the valley has occurred north of the Helena city limits, on the west side of I-15. On the east side of I-15 are the commercial and industrial areas of the valley, centering on the airport, where new commercial development is occurring. Additional low-density residential development has occurred north and east of the airport.



3.6.1 Demographics

The demographic study area includes Lewis & Clark and Jefferson Counties, the city of Helena and the Montana City Census Designated Place (CDP). Additional CDP areas within the study area are Helena Valley Northwest, Helena Valley Northeast, Helena Valley West Central, Helena West Side, and Helena Valley Southeast (see **Figure 3-20**). Data from the U.S. Census Bureau provide the basis for the information in this section (see **Table 3-9**). In the study area, the *Census 2000* data show that while the counties grew at a faster pace than Montana as a whole, Helena and East Helena grew at a slower pace, indicating that growth is occurring more rapidly outside of city limits. According to the *Lewis & Clark County Comprehensive Draft Plan*, January 2000, some of the possible reasons for the growth outside the city limits are: lower taxes, cheaper land prices, and the desire to live in a more rural environment. The areas with the highest growth rates correlate to those areas where more families with children reside. The study area is predominantly white (97%), with Native American, Hispanic, Asian, and African American comprising the remainder.

Table 3-9
Population Statistics

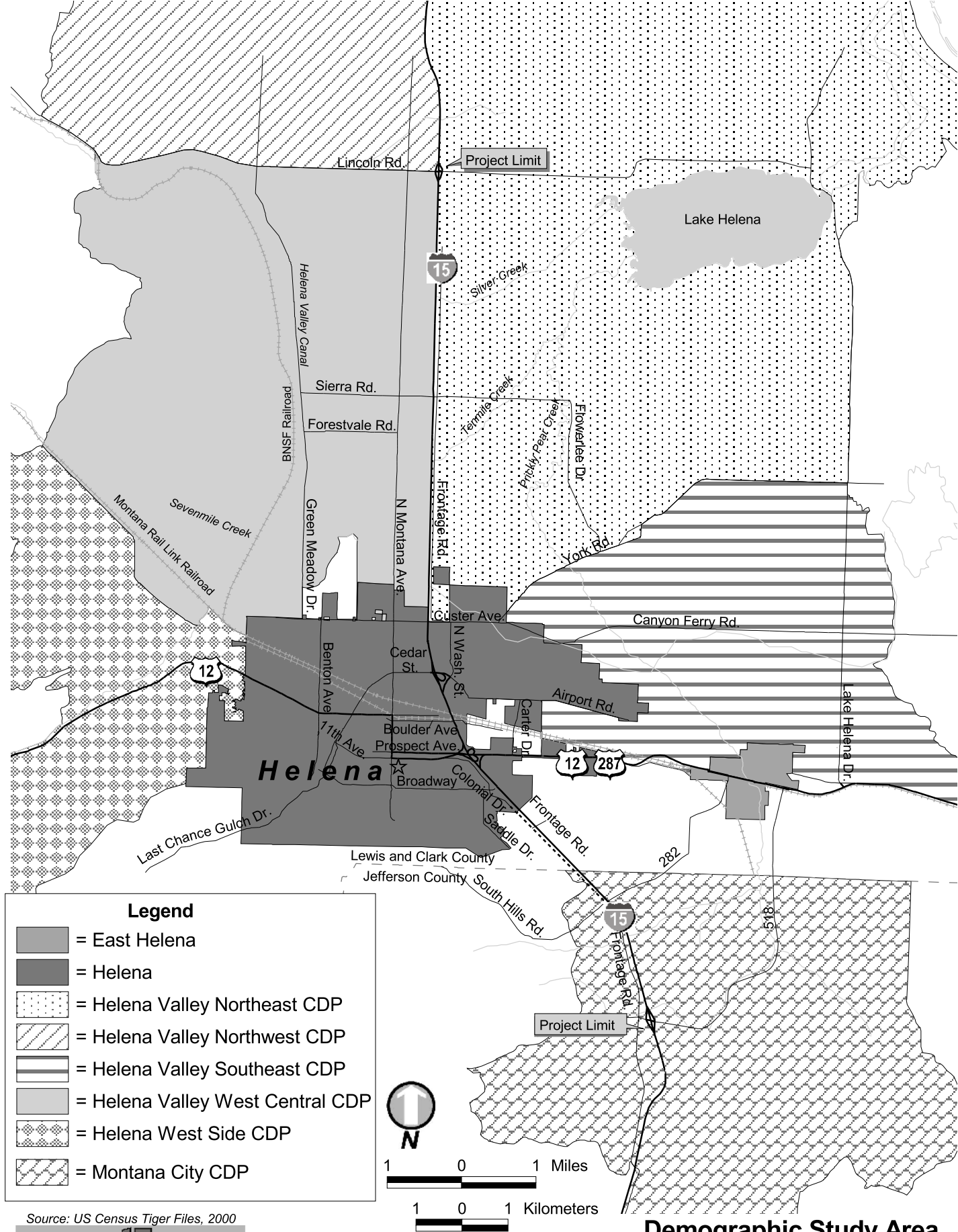
| | Montana | Lewis & Clark County | Jefferson County | Helena | East Helena | Helena Valley NE CDP | Helena Valley NW CDP | Helena Valley SE CDP | Helena Valley West Central CDP | Helena Valley West Side CDP | Montana City CDP |
|--------------------------|----------------|----------------------|------------------|---------------|--------------|----------------------|----------------------|----------------------|--------------------------------|-----------------------------|------------------|
| 2000 Population | 902,195 | 55,716 | 10,049 | 25,780 | 1,642 | 2,122 | 2,082 | 7,141 | 6,983 | 1,711 | 2,094 |
| Percent change 1990-2000 | 12.9 | 17.3 | 26.6 | 4.8 | 6.8 | 33.9 | 71.4 | 55.2 | 10.4 | -7.4 | n/a |

Source: U.S. Census Bureau, *Census 2000*; *Lewis & Clark County Comprehensive Draft Plan*, January 2000

3.6.2 Housing

According to *Census 2000* data, there are 25,672 housing units in Lewis & Clark County, 12,133 in Helena, and 728 in East Helena. Eleven percent of the units in Lewis & Clark County are vacant. This vacancy rate includes 7% that are used as second homes and an 8% vacancy rate for rental units. The home ownership rate is 70%, compared to Montana's rate of 69%. The Montana Business Resource Center reports that the average price of a home in the county is \$116,747, the average rent for an apartment is \$450, and the average rent for a house \$650.

According to *Census 2000* data, there are 4,199 housing units in Jefferson County—10.8% of these are vacant, 4.5% of which are second homes. There is a 5.8% vacancy



rate for rental units. The Montana Business Resource Center reports that the home ownership rate is 83%, compared to Montana's rate of 69%. The Montana Business Resource Center reports that the average price of a home in the county is \$91,000.

3.6.3 Environmental Justice

On February 11, 1994, Federal Executive Order 12898: *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, was issued to reinforce Title VI of the Civil Rights Act of 1964. The order requires federal agencies to incorporate Environmental Justice (EJ) considerations into the National Environmental Policy Act (NEPA) planning process by taking the appropriate and necessary steps to identify and address disproportionately high and adverse affects of federal projects on the health or environment of minority and low-income populations to the greatest extent practicable, and permitted by law. As an entity utilizing federal funds for the development of the I-15 Corridor EIS, the Montana Department of Transportation (MDT) is responsible for successfully integrating environmental justice into its program and planning activities.

In order to determine any issues of concern, minority and/or low-income populations within 0.8 kilometer (0.5 mile) from either side of I-15 are included within the project's area of potential environmental impact, referred to as the study area.

3.6.3.1 Minority Populations

U.S. Census 2000 data was collected at the Census Block level to be used in determining the composition of minority populations within the study area. Minority populations include the following racial and ethnic categories: Black, Hispanic, Asian American, American Indian, and Alaskan Native.

Based upon Census Block data that intersects with the 1.6-kilometer (1-mile) study area boundary (centered on I-15), populations of racial minorities consist of approximately 3% of the total population (of the intersecting Census Blocks) in the study area, with white only populations comprising the remaining 97%. The majority of the racial minorities within the study area are American Indian and Alaskan Native persons.

The threshold used for race and ethnicity within the study area will be the average statewide percentages for both categories, which is approximately 10%. Any Census Blocks that were determined to have substantial concentrations of minority populations above the 10% threshold will be considered potential EJ populations.

Within the entirety of the study area, 28 Census Blocks contain minority populations above the 10% threshold. An individual Census Block directly adjacent to I-15 within the Jefferson County portion of the study area contains a minority population of 50%

due to the fact that the total population within this particular block is two persons. For the purposes of an EJ analysis, this Census Block is considered invalid due to the lack of population density.

Within the study area between Cedar Street and Prospect Avenue, 19 Census Blocks contain minority populations above the 10% threshold. In this neighborhood surrounding and including the Helena Mobile Home Park, populations of ethnic minorities comprise approximately 12% of the total. Census Block data reveals a racial minority population of approximately 15%, with a white only population of approximately 84%.

South of Prospect Avenue, approximately 0.5 kilometer (one-third of a mile) from the Capitol interchange, lie two Census Blocks with minority concentrations of 10.5% and 12.5%. In addition, two Census Blocks with minority concentrations of 11.4% and 12.8% exist northwest of the Cedar Street interchange. Another Census Block within the study area has a minority concentration of 13.6 % and lies along N. Montana Avenue between Custer Avenue and Forestvale Road. The only Census Block containing a higher concentration of minority persons (18.1%) is located north of Sierra Road and west of I-15.

3.6.3.2 Low-income Populations

U.S. Census data collected from the 2000 census for income is only released at the Census Block Group level (larger than a Census Block) for confidentiality reasons. The EJ analysis for concentrations of low-income populations used the following data sources: census data from the 2000 census, county data, and income thresholds established for the year by the U.S. Department of Housing and Urban Development (HUD) prepared for the distribution and allocation of Community Development Block Grant (CDBG) funds. Both HUD and the state of Montana establish low-income definitions based upon household income as a percentage of median household income. The state considers low-income households as those households earning less than 80% of the area median income (AMI) based upon a four-person household. The Helena Housing Authority, and both Lewis & Clark and Jefferson County use 50% AMI in defining the qualifying income limits for low-income housing, such as Section 8 Housing. These figures are usually based upon a four-person household size, whereas the average household size for block groups being analyzed within the I-15 study area are 2.7 persons per household. Thus, low-income households within the study area should be defined based upon a three-person household. For Lewis & Clark County, the 50% AMI threshold for a three-person household is \$21,300, and for Jefferson County, the 50% AMI threshold for a three-person household is \$19,600. The HUD definition of low-income for three-person households is approximately 72% of the AMI and totals \$34,050 for Lewis & Clark County and \$31,400 for Jefferson County. These figures are more inclusive and will be used as the threshold for this EJ analysis.

Substantial numbers of households falling within 72% of the AMI based upon a three-person household would qualify as potential EJ populations.

Within the entirety of the study area, five Census Block Groups contain low-income populations whose median income is less than the 72% AMI threshold. All five of the identified block groups are located within the Lewis & Clark portion of the study area, and are directly adjacent to I-15. None of the block groups are less than 50% AMI. Low-income data from each Census Block Group were also compared to low-income data from each county at a household level. Under the HUD definition, 41.2% of all households in Jefferson County, and 46.5% of all households in Lewis & Clark County could be considered low-income. When comparing the county percentages to the block groups in the study area, 10 census block groups or 2,552 households in Lewis & Clark County exceed the county-wide percentage for low-income. The census block groups in Jefferson County do not exceed the countywide percentage for low-income households.

A low-income Census Block Group was identified along the western side of I-15 approximately 3.2 kilometers (2 miles) north of Custer Avenue and 3.2 kilometers (2 miles) south of Lincoln Road. Approximately 57% of the households within this Block Group are considered low-income. At this time, Forestvale Road runs halfway across the southern third of this Block Group from N. Montana Avenue. Forestvale Road, east of N. Montana Avenue currently provides access to four residences in the Golden Acres Trailer Court, one business, and dead-ends before reaching I-15. (The Golden Acres Trailer Court originally had 8 mobile home residences, four of which were acquired by MDT as part of the 1992 EIS for Forestvale.)

Section 8 Housing Facilities and Other Low-Income Populations

While not required by Executive Order 12898, other demographic data may be used to assess the community for EJ populations. In this analysis, locations of known government-subsidized housing within the study area, also known as Section 8 Housing under the Tenant Based Assistance: Housing Choice Voucher Program were identified as areas of potential EJ populations. The two housing complexes located within the study area, the Penkay Eagle's Manor and the Eagle's Manor II, provide a percentage of Section 8 Housing units to those who qualify for assistance.

In addition, 72 people within the five identified Census Block Groups containing low-income populations are receiving some form of public assistance. This assistance includes welfare payments, cash public assistance payments (based upon low-income qualification such as aid to families with dependent children), temporary assistance to needy families, general assistance, and emergency assistance.

3.6.4 Community Facilities/Resources

The community facilities mentioned in this section are shown by location in **Figure 3-21**.

In Jefferson County, the Jefferson High School District and the Montana City Elementary School District serve the study area. Students of high school age attend Jefferson High School in Boulder. Montana City Middle School and Montana City Elementary share a campus in Montana City.

In Lewis & Clark County, Helena School District #1 serves Helena with eleven elementary schools, two middle schools and three high schools. There are four schools (2 elementary and 2 middle schools) in East Helena. The Helena Elementary and High School Districts serve students in the Helena Valley outside of the city.

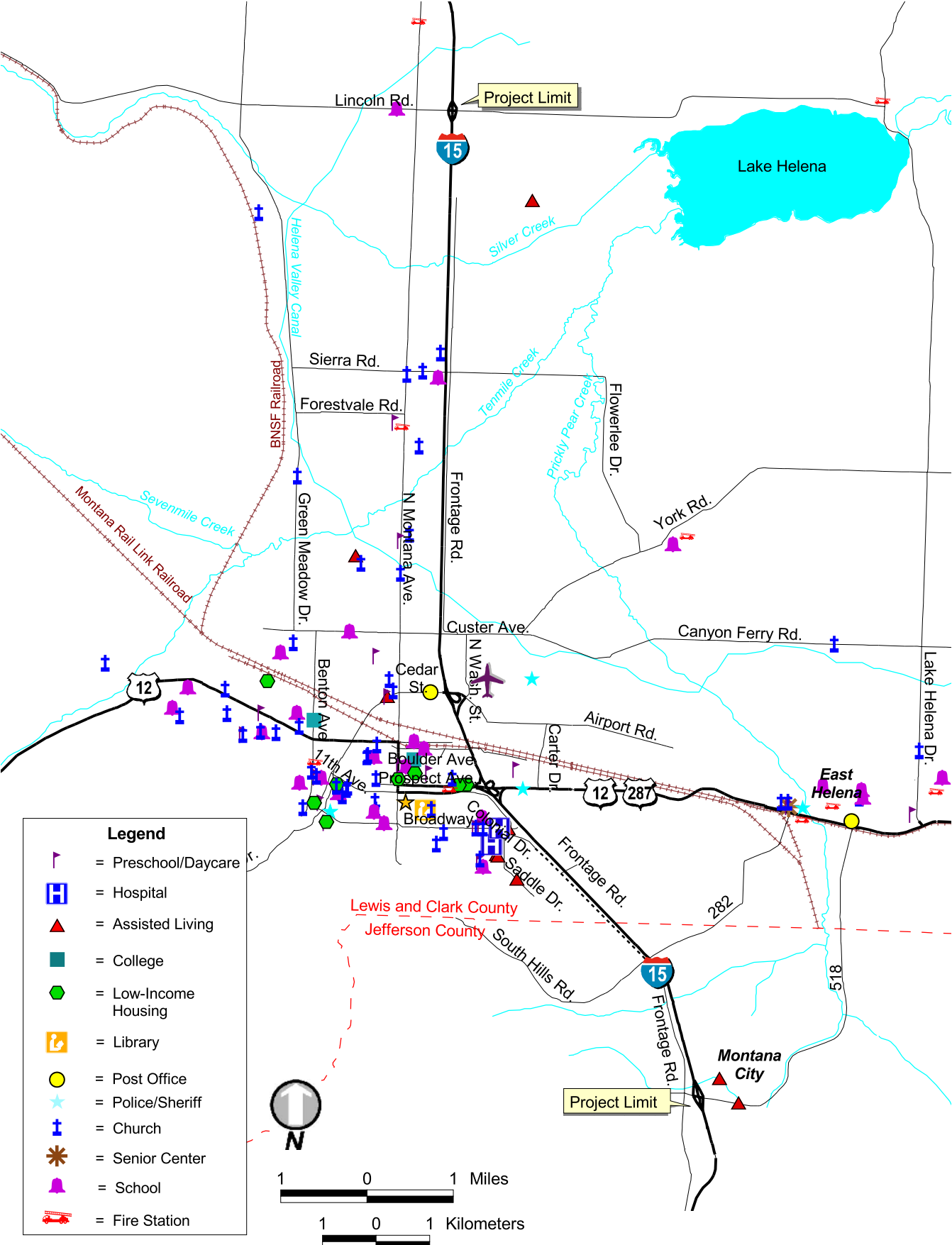
The Helena College of Technology of the University of Montana and Carroll College provide higher education to the area. In addition, there are five private schools (Cornerstone Academy, Rocky Mountain Christian High School, Seventh Day Adventist School, Christ's Church School and West Side Christian Academy) and 19 preschools.

Four hospitals and eleven clinics serve the study area, including a Veterans' hospital at Ft. Harrison and a clinic in Montana City. The remaining health care facilities are in Helena. Many of the medical facilities are clustered near I-15, southwest of the Capitol interchange. Currently, there is no direct access from I-15 to this area.

The city of Helena Parks Department oversees 445 hectares (1,100 acres) of city parks, golf course and open space, much of it in the foothills south of the city and west of I-15. Facilities include playgrounds, swimming pools, and golf courses. Lewis & Clark County oversees 30 sites totaling 104 hectares (257 acres) throughout the county. In Lewis & Clark County, there are four county library branches, the two college libraries, and the Montana State Library. There are 7 health clubs in the study area, 7 youth centers, 5 senior centers, and 47 churches and synagogues.

3.6.5 Public Safety

The Lewis & Clark County Sheriff's Office provides general law enforcement, detention functions, rural fire support and search and rescue operations for the citizens of Lewis & Clark County outside of Helena city limits. Additionally, this agency provides contract law enforcement to specific areas. The Sheriff is responsible for the operation of the Lewis & Clark County Volunteer Fire Department (VFD) as well as coordination of all 15 rural fire departments within the county. The Lewis & Clark VFD is charged with providing fire protection for all areas of the county



Source: US Census Tiger Files, 2000

that are not covered by other fire jurisdictions, or federal/state protection. The Helena Police and Fire Departments protect the city of Helena. The East Helena Fire Department covers East Helena, and the East Valley Fire District and the West Helena Valley Fire District protect the unincorporated areas adjacent to the two cities. While these fire agencies also provide emergency medical response, ambulance service in the study area is provided from St. Peter's Hospital and ambulance service located in the hospital area southeast of Helena. Due to distances across the study area, limited access to I-15, and traffic congestion in the hospital area, response times can vary greatly.

The Jefferson County portion of the study area is protected by the Montana City Rural Fire District Volunteer Fire Department for both structure and wildland fires. The Jefferson County Sheriff's Office works closely with its Reserve Deputy Program, Search and Rescue, local fire and ambulance services, and all volunteer services to provide emergency services in its jurisdiction. The Montana Highway Patrol is responsible for highway traffic safety management for the state of Montana including investigations and enforcement.

3.7 Right-of-Way

The existing right-of-way or easement along I-15 owned by MDT varies in width, from approximately 41 to 107 meters (135 to 350 feet). There are larger parcels of land included in the right-of-way for current or previously planned interchanges. These are at Lincoln Road, Forestvale Road, Cedar Street, and Prospect Avenue in Lewis & Clark County, and at County Road 518 in Jefferson County.

3.8 Economic Conditions

The basic economic data for the state of Montana, Lewis & Clark County, and Jefferson County are listed in **Table 3-10**. Between 1990 and 1999, the number of businesses in Montana grew by 25%. The number of businesses also grew in Lewis & Clark County by 25%, and in Jefferson County by 44%, according to the U.S. Census Bureau's County Business Patterns. Retail sales were over \$7.7 billion in Montana in 1997, \$500 million in Lewis & Clark County, and \$17 million in Jefferson County. The Lewis & Clark County economy is based on government employment, services, and retail trade. Jefferson County's economy is based on government employment, mining, and retail.

**Table 3-10
Economic Trends**

| Economic Measure | Montana | | Lewis & Clark County | | Jefferson County | |
|---|----------|----------|----------------------|----------|------------------|----------|
| | 1990 | 2000 | 1990 | 2000 | 1990 | 2000 |
| Population | 799,065 | 902,195 | 47,495 | 55,716 | 7,939 | 10,049 |
| Per Capita Income | \$11,213 | \$19,660 | \$12,342 | \$21,635 | \$13,233 | \$20,903 |
| Median Household Income ¹ | \$22,988 | \$33,024 | \$26,409 | \$37,360 | \$31,400 | \$41,506 |
| Employment | 377,000 | 455,608 | 24,404 | 27,251 | 3,923 | 4,993 |
| Unemployment | 24,000 | 23,524 | 1,150 | 1,213 | 203 | 267 |
| Unemployment Rate | 6.0% | 4.9% | 4.5% | 4.3% | 4.9% | 5.1% |
| Average Annual Wage | \$18,636 | \$24,275 | \$19,814 | \$27,120 | \$21,241 | \$25,612 |
| Percent of population in poverty | 16.1% | 14.6% | 11.8% | 10.9% | 7.4% | 9.0% |
| Percent of population considered low-income by HUD standards (80% AMI for household of 4) | N/A | N/A | 46.0% | 53.3% | 31.0% | 41.2% |

¹Census data for 2000

Sources: U.S. Census Bureau; Montana Department of Labor & Industry, Research and Analysis Bureau.

3.8.1 Employment

For the past few years, Lewis & Clark County has experienced an annual job growth rate of 1.5%, a little higher than Montana's rate of 1.4%, from 1998 to 1999. The growth of jobs occurred in the retail trade, financial/real estate, and service sectors. Next to government employment, these sectors employ the most people in Lewis & Clark County. Currently, over 27,000 people are employed, and 4.3% are unemployed. The largest private employers in the county are Albertson's, Big Sky Care Center, Blue Cross/Blue Shield, Carroll College, County Market, Diamond Construction, Dick Anderson Construction, Federal Reserve Bank, Helena Healthcare Inc., Independent Record, Mergenthaler Transfer and Storage, St. Peter's Hospital, Shodair, Shopko, TRW Systems, Qwest, Wal-Mart, Watkins & Shepard Trucking, and West Mont (listed alphabetically).

Jefferson County saw a greater job growth, with an annual job growth rate of 5.8% from 1998 to 1999, than Montana's and Lewis & Clark County's rate. The growth of jobs occurred in the financial/real estate, service, and wholesale/retail trade sectors, offsetting job losses in the agriculture/forestry, manufacturing, and mining sectors, where average wages are higher. The government sector employs the most people in Jefferson County, and mining is second even though employment in this sector is on the decline. More than one-third of Jefferson County residents work in Lewis & Clark County, according to Jefferson County statistics. Currently, almost 4,000 people are employed, and 4.9% are unemployed. The largest employers in Jefferson County are Ash Grove Cement Company, Aspen Youth Alternatives, Evergreen Clancy Health &

Rehabilitation Center, Golden Sunlight Mine, Harlow's School Bus Service, Jefferson IGA, Montana City Grill & Saloon, Montana City Store, Montana Tunnels Mining, and Peace Valley Hot Springs (listed alphabetically).

By 2008 the Montana Department of Labor and Industry expects to see the greatest statewide job growth in the services, financial, and construction sectors of the economy. The agricultural sector is expected to decline, while modest growth is anticipated in all other sectors. **Table 3-11** shows the growth in the past for each sector, along with the projected growth.

Table 3-11
Montana Jobs by Industry

| | 1988 Annual Average Jobs | 1998 Annual Average Jobs | Projected 2008 Jobs | Average Annual Change 1998-2008 | Montana Annual Growth Rate | Average Annual Wage 2000 |
|---------------------------------|---|---|--------------------------------|--|---|---|
| Agriculture | 9,554 | 8,455 | 6,918 | -154 | -2.0% | \$18,603 |
| Mining | 6,263 | 5,163 | 5,382 | 22 | 0.4% | \$49,057 |
| Construction | 9,014 | 18,860 | 23,677 | 482 | 2.3% | \$28,996 |
| Manufacturing | 21,512 | 24,149 | 24,910 | 76 | 0.3% | \$31,392 |
| Transportation & Utilities | 19,690 | 21,733 | 24,442 | 271 | 1.2% | \$32,760 |
| Wholesale Trade | 14,733 | 18,779 | 21,301 | 252 | 1.3% | \$30,487 |
| Retail Trade | 59,536 | 81,347 | 94,153 | 1,281 | 1.5% | \$14,338 |
| Finance, Real Estate, Insurance | 13,147 | 17,086 | 20,807 | 372 | 2.0% | \$31,383 |
| Services | 67,460 | 105,918 | 138,317 | 3,240 | 2.7% | \$21,896 |
| Government | 68,610 | 78,674 | 83,812 | 514 | 0.6% | \$28,878 |
| Self-Employment | 108,008 | 141,730 | 159,951 | 1,822 | 1.2% | N/A |

Source: Research and Analysis Bureau, Montana Department of Labor & Industry

3.9 Air Quality

3.9.1 Regulatory Background

Under the Clean Air Act of 1970, the EPA established National Ambient Air Quality Standards (NAAQS) for six criteria pollutants to protect the public from the health hazards associated with air pollution. These six criteria pollutants are carbon monoxide (CO), ozone (O₃), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), lead (Pb), and particulate matter (PM₁₀ and, since July 18, 1997, PM_{2.5}). The state of Montana has adopted the NAAQS for these criteria pollutants except PM_{2.5}.

Concentrations of these pollutants in ambient air are monitored by the Montana Department of Environmental Quality (DEQ) Monitoring & Data Management Bureau (MDMB). In addition to the NAAQS, the state of Montana has adopted state air quality

standards for settleable particulate, and non-transportation related pollutants such as fluoride in forage and hydrogen sulfide.

Geographic areas that exceed a particular NAAQS pollutant standard are considered "non-attainment" areas for that pollutant.

Urban Air Toxics

In addition to the NAAQS set forth by EPA for the six criteria pollutants discussed above, EPA also has established a list of 33 urban air toxics. Urban air toxics, also known as hazardous air pollutants, are those pollutants that cause or may cause cancer or other serious health effects or adverse environmental and ecological effects. Most air toxics originate from human-made sources, including road mobile sources (e.g., cars, trucks, buses), non-road mobile sources (e.g., airplanes, lawnmowers, etc) and stationary sources (e.g., factories, refineries, power plants), as well as indoor sources (e.g., building materials). Some air toxics are also released from natural sources such as volcanic eruptions and forest fires.

These pollutants are in our atmosphere as a result of our industrialized society, but science has been providing evidence about the risks they pose to human health. The health risks for people exposed to urban air toxics at sufficiently high concentrations or lengthy durations include an increased risk for contracting cancer or experiencing other serious health effects. These health effects can include damage to the immune system, as well as neurological, reproductive, developmental, respiratory and other health problems.

To better understand the harmful effects road sources of urban air toxics have on human health, the EPA developed a list of 22 mobile source air toxics (MSAT) in 1996. In March 2001 the EPA established regulations for the producers of urban air toxics to decrease the amounts of these pollutants by target dates in 2007 and 2020. For road MSATs, the primary method of reduction will come through stricter emissions standards for vehicles and regulation of gasoline additives. However, the EPA has not yet determined how best to evaluate the impact of future roads and intersections on the ambient concentrations of urban air toxics. For now, it is best to assume that there is a slightly greater exposure to these pollutants near roads and intersections.

Along the I-15 Corridor, this risk is relatively low since along most of the freeway, residential uses are not located adjacent to I-15 or its interchanges. The exceptions to this are just north of the Capitol interchange, just south of the Cedar interchange and about 1.6 kilometers (1 mile) north of Custer, at Tenmile Creek Estates and Treasure State Acres subdivision.

3.9.2 Existing Conditions

The study area is in attainment for the following transportation-related criteria pollutants as established by the NAAQS: CO, O₃, NO₂, PM₁₀ and PM_{2.5}. According to Montana's DEQ, the study area is exempt from regional analysis of carbon monoxide since it is not within a non-attainment or maintenance area. Additionally, any proposed project(s) would not be in a non-attainment area. Currently, there are two PM₁₀ monitoring sites located along I-15, one at Lincoln School at 1325 Poplar Street and the other at Rossiter School at 1497 East Sierra Road.

For two criteria pollutants, SO₂ and Pb, EPA has designated East Helena as a non-attainment area for both (neither of these pollutants are transportation-related). These areas lie to the east of I-15 and on the outside edge of the I-15 study area. The primary source of these pollutants is the ASARCO smelter, which closed in April 2001. Since the closure of the plant, the five ambient air quality monitoring sites located within the East Helena area also have shut down. These sites primarily monitored for Total Suspended Particulate (TSP) and various metals, including lead. One site also monitored for sulfur dioxide as did monitors on the ASARCO stacks.

Montana allows cities and counties to establish their own local air pollution control program. Lewis & Clark County has an Outdoor Clean Air Ordinance that applies to their Air Quality Protection District which includes Helena, East Helena, and the surrounding area. This ordinance is intended to help protect and improve air quality in the greater Helena area. The ordinance prohibits open burning, wood stoves, and idling of diesel-fueled engines during times of poor air quality [when PM₁₀ levels are at a concentration of 75ug/m³ (micrograms per cubic meter)] or during a meteorological inversion. The burning of coal as a solid fuel is prohibited at all times, unless an exemption has been granted.

From 1995 to 2000 there were very few days classified as poor by the city/county health department. The worst year was 1996 with nine days classified as poor. In 1999 and 2000 there were no days classified as poor. The Helena region has winds that blow predominantly out of the west. Thus, dispersion of air pollutants is generally to the east of the source of the pollutant.

Jefferson County has not established an air pollution control program within its boundaries.

3.10 Noise

3.10.1 Noise Principles

Decibels (dB) are the unit by which noise levels are measured. Given that the human ear responds differently to various frequencies, measured sound levels (in decibels) are generally “weighted” to equate to frequency response of humans and human perception of loudness. Weighted sound levels are expressed in units called A-weighted decibels (dBA). For orientation purposes, **Table 3-12** provides the relationship between decibels and loudness. **Table 3-13** gives examples of common outdoor noise levels. These representative noise levels are shown as dBA values.

Table 3-12
Relationship Between Decibels and Loudness

| Sound Level Change | Relative Loudness |
|--|------------------------------|
| +10 dBA | Twice as Loud |
| +5 dBA | Readily Perceptible Increase |
| +3 dBA | Barely Perceptible Increase |
| 0 dBA | Reference |
| -3 dBA | Barely Perceptible Decrease |
| -5 dBA | Readily Perceptible Decrease |
| -10 dBA | Half as Loud |
| Source: <i>Acoustics and Your Environment—The Basics of Sound and Highway Traffic Noise</i> . U.S. Department of Transportation, FHWA, 1999. | |

Table 3-13
Common Outdoor Noise Levels

| Common Outdoor Noise Levels | Noise Level dBA |
|---|-----------------|
| Diesel Truck at 15 meters (50 feet) | 90 |
| Noisy Urban Daytime | 80 |
| Commercial Area | 65 |
| Quiet Urban Daytime | 50 |
| Quiet Urban Nighttime | 40 |
| Quiet Suburban Nighttime | 35 |
| Source: <i>Guide on Evaluation and Abatement of Traffic Noise</i> , American Association of State Highway and Transportation Officials, 1993. | |

Transportation-related noise (vehicular traffic and transit fleet operations) generally fluctuates over time. This fluctuation is a result of varying traffic operating conditions and frequency. Averaging noise levels produced by different activities over a period of time allows the definition of a single number to describe the condition. This resulting single number captures the equivalent continuous noise level or L_{eq} . $L_{eq}(h)$ is the descriptor for the equivalent continuous noise level when the time period is one hour.

3.10.2 Noise Abatement Criteria

There are three primary guidance documents that were used for the EIS in analyzing noise impacts and determining when it is appropriate to consider mitigation for impacted receivers:

- ▶ Federal Highway Administration, *Procedures for Abatement of Highway Traffic Noise and Construction Noise (23 CFR Part 772)*
- ▶ Federal Highway Administration, *Highway Traffic Noise Analysis and Abatement, Policy and Guidance, June 1995*
- ▶ Montana Department of Transportation, *Traffic Noise Analysis and Abatement: Policy and Procedure Manual, June 2001*

These documents collectively establish noise thresholds based on land use. Land uses were categorized and hourly noise level maximums were established. A complete list of Noise Abatement Criteria (NAC) and each land use threshold is indicated in **Table 3-14**.

Table 3-14
FHWA Noise Abatement Criteria (NAC)
 Hourly A-Weighted Sound Level in Decibels (dBA)

| Activity Category | Leq (h) (hourly) | Description of Activity Category |
|-------------------|------------------|---|
| A | 57 (exterior) | Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose. |
| B | 67 (exterior) | Picnic areas, recreation areas, playgrounds, active sports areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals. |
| C | 72 (exterior) | Developed lands, commercial areas, properties or activities not included in Categories A or B above. |
| D | -- | Undeveloped lands. |
| E | 52 (interior) | Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums. |

Source: *Procedures for Abatement of Highway Traffic Noise and Construction Noise (23 CFR Part 772)*.

The above criteria are typically applied to outdoor areas of use, which for residences is usually described as a first-floor outdoor patio/deck area. If a project would result in noise levels above these thresholds, noise mitigation would need to be considered as a part of the project.

In addition to the federal criteria described in **Table 3-14**, the Montana Department of Transportation (MDT) has established a 1.0 dBA approaching criteria, meaning noise impacts and abatement measures are considered if a project causes noise levels to approach within one decibel of the standard. For example, for a residential area (Activity Category B), a noise impact would occur if the project results in a noise level of 66 dBA or greater. In addition, a noise impact is considered to be substantial if the

project would result in a noise increase of 13 dBA or greater over existing noise levels. Under these circumstances, noise mitigation must also be considered.

3.10.3 Existing Conditions

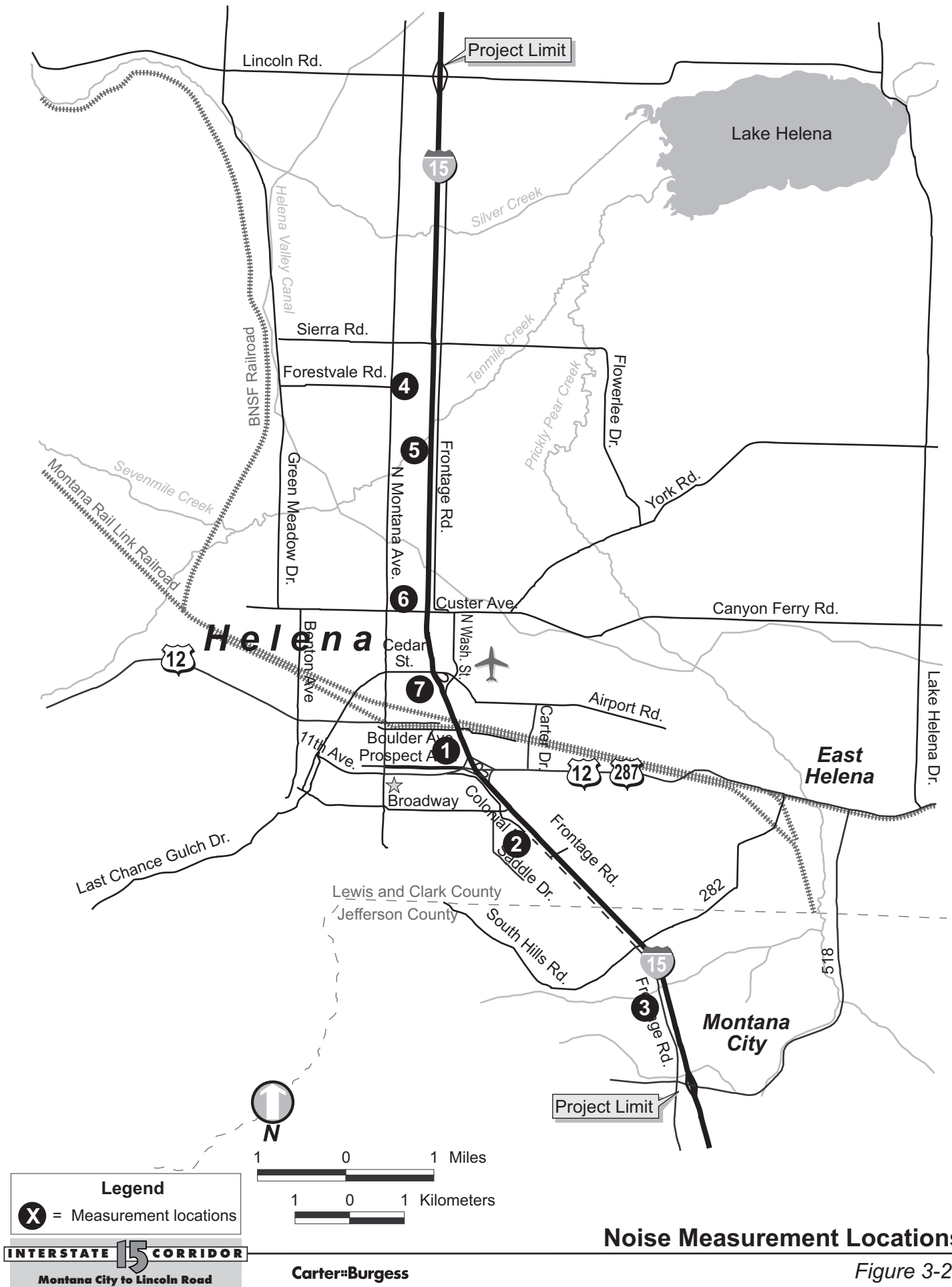
Land uses along the I-15 Corridor vary from undeveloped rural lands to denser urban development within Helena. The majority of the study area includes undeveloped rural lands, much of which is utilized for agricultural production. There are some scattered residential developments within these rural sections. Within the developed portions of the study area, primarily within Helena and its immediate surroundings, land uses include single and multi-family residential, commercial, industrial, and parks and recreation. "Noise-sensitive" land uses along the I-15 Corridor include various single-family residential developments, including trailer parks, recreational facilities, schools, and a hospital.

Existing noise levels were measured at seven locations along I-15, three in September 2001 and four more in August 2002, to represent the receptors within the study area based on their proximity to I-15 and their potential for impact. Noise measurements were taken at five of the locations in the morning peak travel time and two locations in the evening peak travel time. These locations are shown in **Figure 3-22**. Sensitive receptors are land uses that fall into FHWA NAC Category B or C. Field measurements at the seven monitoring locations were generally taken at the closest point of the structure or closest outdoor use area to the roadway. Field results are shown in **Table 3-15**.

Table 3-15
Existing Noise Levels

| Site ID | Activity Category | Location | Monitored Noise Level (dBA) | Applicable MDT NAC (dBA-Leq) |
|---------|-------------------|--|-----------------------------|------------------------------|
| 1 | B | Washington/Livingston Intersection | 50 | 66 |
| 2 | B | Hunters Pointe Retirement Center | 57 | 66 |
| 3 | B | Residences along Frontage Road | 56 | 66 |
| 4 | B | Near Forestvale/N. Montana Avenue Intersection | 45 | 66 |
| 5 | B | Residence at Treasure State Acres | 62 | 66 |
| 6 | C | Off Custer between N. Montana Avenue and I-15 | 65 | 71 |
| 7 | B | Trailer Park (North of RR/West of I-15) | 67 | 66 |

As shown in **Table 3-15**, the existing monitored noise measurement taken at Receptor 7 was over the FHWA NAC. The development of the mobile home park occurred after original construction of I-15. The neighboring permanent homes, however, were in existence prior to development of the interstate. This indicates that a portion, if not all, of the first row of trailer homes at the trailer park located southwest of the I-15/Cedar Street interchange currently receives noise levels in excess of the FHWA



and MDT criteria levels. The other representative monitored locations were below the NAC level.

Existing monitored noise levels represent all exterior noise sources recorded at the site, including natural and mechanical sources, background railroad, construction noise, and human activities. Traffic noise was the dominant noise source at all locations, except Receiver 1, where construction noise was uncharacteristically dominant.

3.11 Water Resources and Water Quality

3.11.1 General Description

This section summarizes the information presented in the technical paper entitled, *Water Resource Inventory and Evaluation for the I-15 Corridor Study* prepared in March 2002. Two study area boundaries were used for water resources. The first is the immediate area, which is .8 kilometer (.5 mile) to either side of I-15. The second is an expanded study area and is 4 kilometers (2.5 miles) to either side of I-15.

The I-15 study area falls within the Upper Missouri River basin, the Missouri-Sun-Smith sub-major basin, and the Upper Missouri watershed. The Upper Missouri watershed is located to the east of the Continental Divide and covers approximately 8,702 square kilometers (3,360 square miles), the majority of which falls within Lewis & Clark, Broadwater, and Jefferson Counties. The major aquifer is the Helena Valley-Fill Aquifer system.

The EPA uses the *Index of Watershed Indicators* (IWI or Index) to look at a variety of indicators that point to whether rivers, lakes, streams, wetlands, and coastal areas are "well" or "ailing" and whether activities on the surrounding lands that affect the waters are placing them at risk. The Upper Missouri watershed as a whole scored a five on a scale of one to six, with one being the least impaired and six being the most impaired. The EPA has classified the Upper Missouri watershed as having "more serious water quality problems," meaning that aquatic conditions in specific areas are well below state or tribal water quality goals and serious problems are exposed by other indicators. The EPA also classified the watershed as having a "lower vulnerability to stressors," meaning pollutants or other stressors are low and there is a lower potential for future decline in aquatic health.

3.11.2 Impaired Waters and TMDL Regulation

The Montana Department of Environmental Quality (DEQ) is the state agency with responsibility for preserving and maintaining the quality of Montana's water supply. DEQ has responsibility under the federal Clean Water Act and the Montana Water

Quality Act to monitor and assess the quality of Montana surface waters. The Clean Water Act requires states to adopt standards for the protection of surface water quality. Montana's standards are designed to maintain water quality that will support the beneficial uses identified by the Montana Water-Use Classification System. Classifications assigned by this system require waters to support some or all of the following uses: drinking and food processing; bathing; swimming and contact recreation (swimming, rafting, kayaking and water skiing); growth and propagation of fish and associated aquatic life, waterfowl, and furbearers; and agricultural and industrial water supply.

When water quality standards cannot be met, and when permits and Best Management Practices (BMPs) prove inadequate to fully protect water quality, the provisions of Section 303(d) of the Clean Water Act come into effect. The language of this section and related EPA regulations require states to identify waters where quality is impaired, and submit a list of the threatened or impaired waters. An impaired water body is defined as one that does not fully support one or more beneficial uses. The "303(d)" list includes water bodies that are impaired and are in need of a plan to identify the necessary measures to bring water quality into compliance. This can be accomplished by estimating the Total Maximum Daily Load (TMDL) of pollutants that a water body can assimilate and still meet water quality standards. Once the 303(d) list is submitted, EPA and DEQ can establish a "high", "moderate" or "low" priority for TMDL development, based upon factors including individual water body characteristics, grouping waters having similar or interrelated problems, availability of data, and the degree of public interest and support. See **Table 3-16** for waters listed on the Montana DEQ Year 2002 303(d) List that are either within the study area or are receiving waters of those in the study area.

Table 3-16
List of Probable Causes and Sources for Listing
on the 2002 Montana State 303(d) List

| Water Body | Probable Causes | Probable Sources |
|--------------------|--|---|
| Lake Helena | Arsenic, Lead, Metals | Agriculture; Crop-related Sources; Resource Extraction; Acid Mine Drainage; Abandoned Mining; Hydromodification; Flow Regulation/ Modification |
| Prickly Pear Creek | Bank erosion; Dewatering; Fish habitat degradation; Flow alteration; Metals; Nutrients; Other habitat alterations; Riparian degradation; Siltation; Thermal modifications; Unionized Ammonia | Industrial Point Sources; Municipal Point Sources; Construction; Highway/Road/Bridge Construction; Agriculture; Crop-related Sources; Grazing related Sources; Resource Extraction; Acid Mine Drainage; Abandoned Mining; Land Disposal; Hydromodification; Habitat Modification other than Hydromodification; Channelization; Contaminated Sediments |

continued

Table 3-16 (continued)
List of Probable Causes and Sources for Listing
on the 2002 Montana State 303(d) List

| Water Body | Probable Causes | Probable Sources |
|-------------------|--|--|
| Tenmile Creek | Arsenic; Cadmium; Copper; Lead; Mercury; Metals; Other habitat alterations; Turbidity; Zinc | Agriculture; Crop-related Sources; Construction; Highway/Road/Bridge Construction; Land Development; Resource Extraction; Acid Mine Drainage; Abandoned Mining; Hydromodification; Habitat Modification other than Hydromodification; Channelization; Flow Regulation/Modification |
| Silver Creek | Flow alteration; Metals; Other habitat alterations; Priority organics | Agriculture; Crop-related Sources; Resource Extraction; Subsurface Mining; Dredge Mining; Mill Tailings |
| Sevenmile Creek | Flow alteration; Metals; Nutrients; Other habitat alterations; Riparian degradation; Siltation | Agriculture; Grazing-Related Sources; Resource Extraction; Abandoned Mining, Hydromodification, Channelization |

Source: Montana Department of Environmental Quality 2002 303(d) List.

Of the water bodies listed in Table 3-15, those that fall within the immediate study area are Tenmile Creek and Silver Creek. Threats to these water bodies include land development; agricultural practices and sources; municipal point source pollution; resource extraction such as historical mining impacts such as dredge, placer, and subsurface mining and the deposition of mill tailings and acid mine drainage; highway, road, and bridge construction; stream and streambank modifications such as channelization and flow regulation; and habitat modification. EPA and DEQ are working together to develop and adopt a schedule that will result in developing all necessary TMDLs for waters on Montana's 303(d) list on a watershed basis. It is expected that the impaired stream segments in the study area will be reassessed and TMDLs will be developed by the end of 2003. However, any alternative selected as the Preferred Alternative would have appropriate BMPs incorporated in the construction plans and provisions that meet the TMDL levels established by the 2003 assessment.

3.11.3 Surface Water

There are numerous surface water features that cross and surround the I-15 Corridor between the Montana City and Lincoln Road interchanges. The waters from these drainages are used for various city of Helena water uses, including household, industrial, and commercial uses. A daily average of 3.51 million gallons of water is treated for the local water uses at the city of Helena Wastewater Plant, and the remaining treated discharge water is disinfected and reused for irrigation and other treatment processes. The remaining effluent discharges into Prickly Pear Creek and eventually flows into Lake Helena and the Missouri River system. Currently, land

development, agricultural practices, various discharges from throughout the watershed, and other activities threaten the integrity of the lake. See Section 3.13.4 for a discussion of the aquatic habitat of these drainages.

Several major stream networks cross the valley and drain into the Missouri River system. These water features are shown in **Figure 3-23**. The main waterbodies that pass through the immediate I-15 study area are:

- ▶ **Tenmile Creek**—Tenmile Creek drains about 518 square kilometers (200 square miles) from the southwest towards Lake Helena. The major water use in the upper part of the watershed is diverted water for municipal supply and storage for the city of Helena. This demand frequently leaves the streambed dry. The major water use in the lower part of the watershed is for irrigation. Tenmile Creek was designated as a “high” priority on the year 2000 TMDL development list, and the lower Tenmile Creek watershed is a National Priority List Superfund site due to past mining activities.
- ▶ **Silver Creek**—The headwaters of Silver Creek drain eastward across the Helena Valley floor toward Lake Helena. Silver Creek is intermittent due to the porous nature of the soils, limited precipitation in the watershed, and irrigation diversions. Silver Creek was designated as a “low” priority on the year 2000 TMDL development list.
- ▶ **Helena Valley Canal and Irrigation System**—The current irrigation system in the study area, including the Helena Valley Canal, is operated and managed by the Helena Valley Irrigation District (HVID). The Helena Valley Canal traverses Silver Creek, Tenmile Creek, and Prickly Pear Creek through half-siphons, which in turn allow the natural drainage of the creeks to cross the irrigation canal. The canal directly crosses I-15 just north of Custer Avenue. As of 2000, the HVID irrigates 6,321 hectares (15,608 acres) in the Helena Valley and eastward towards Lake Helena. Ultimately, the irrigation water is discharged back to Lake Helena. The Helena Valley Canal is not an assessed waterbody for TMDL regulation.

Major waterbodies in the expanded study area include:

- ▶ **Prickly Pear Creek**—The headwaters of Prickly Pear Creek are located in northern Jefferson County, and the stream runs just to the south and east of I-15 before draining into Lake Helena. This is the only water feature located in the Jefferson County portion of the study area. The stream morphology has been adversely affected by past mining activities in the upstream reaches, industrial activities (smelting and municipal wastewater discharges), urban development, and agricultural practices. In the lower reaches, the water has been predominantly utilized for irrigation throughout the Helena Valley, with the extent of this use declining as agricultural lands convert to other uses such as urban and suburban



development. Prickly Pear Creek is listed as an impaired stream and Tenmile Creek, also on the 303(d) list, is a tributary to Prickly Pear Creek. Prickly Pear Creek was designated as a “moderate” to “low” priority on the year 2000 TMDL development list.

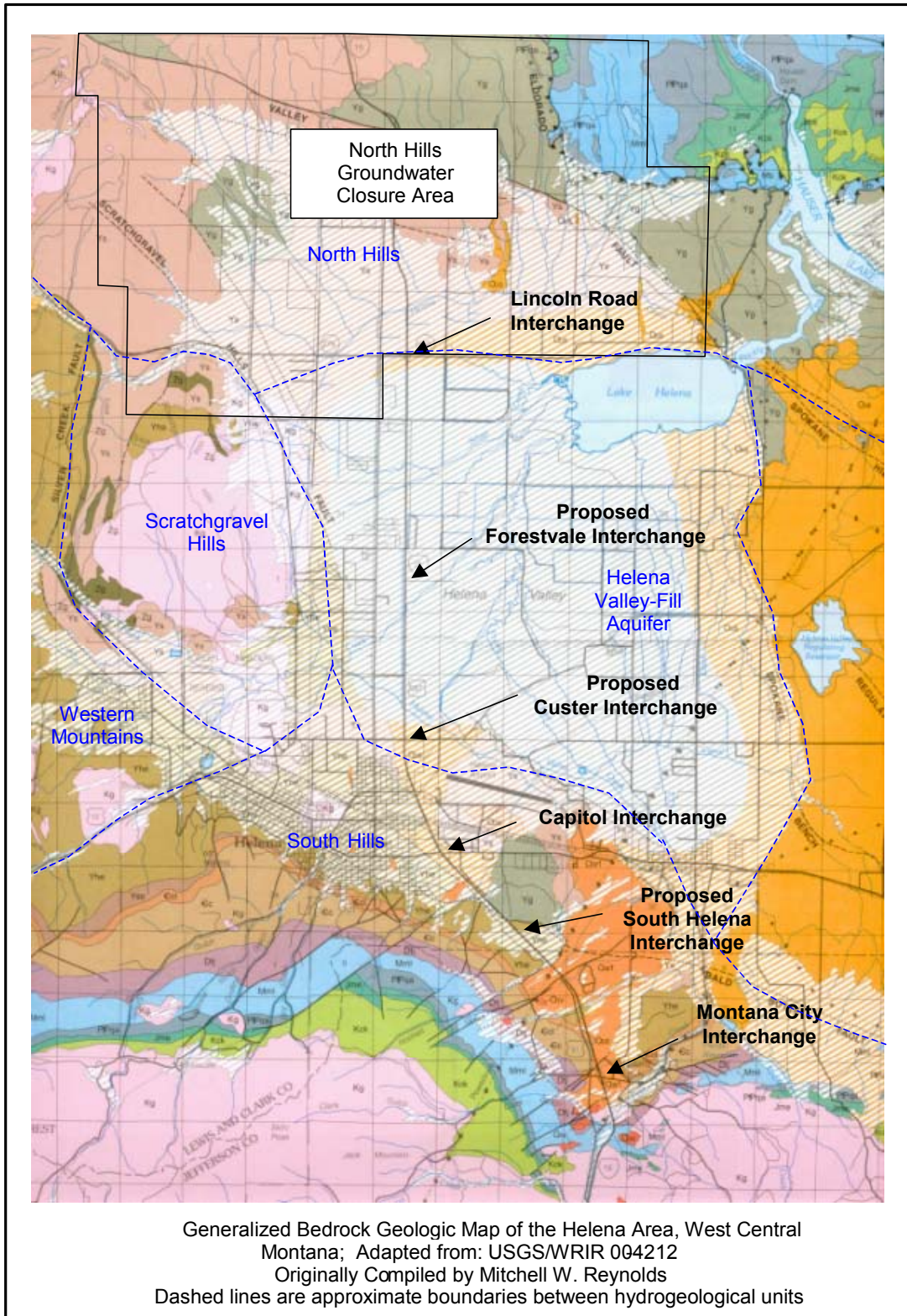
- ▶ **Sevenmile Creek**—Sevenmile Creek is tributary to Tenmile Creek and originates on the western side of the I-15 Corridor study area. Sevenmile Creek is a perennial stream with a watershed area that drains from the northwest portion of the expanded study area. Some irrigation diversions are utilized in the lower stretches of the stream. The stream morphology has been adversely affected by past mining activities, railroad construction, and agricultural practices. Sevenmile Creek was not listed on Montana’s 2000 303(d) list, but has recently been listed on the year 2002 303(d) list.
- ▶ **Lake Helena**—All water from the waterbodies crossing I-15 within the study area eventually flow into Lake Helena. Lake Helena is located just outside of the northeast portion of the expanded study area and covers approximately 7.77 square kilometers (3 square miles). Lake Helena is included on the year 2002 303(d) list as an impaired waterbody and was designated as “low” priority for TMDL development in 2000.

3.11.4 Groundwater

The study area has an average annual precipitation of approximately 30 centimeters (12 inches), whereas the potential evapotranspiration for the Helena area is about 76 centimeters (30 inches). Therefore, the study area is not a predominant source for groundwater recharge. Exceptions occur during infrequent high intensity precipitation or snowmelt events when infiltration is greater than the sum of evapotranspiration and soil-moisture deficit.

For the purpose of this EIS, generalized hydrogeological units have been developed using the geographic regions identified in the *U.S. Geological Survey Water Resources Investigation Reports* compiled by Joanne N. Thamke, 2000 (see **Figure 3-24**), and by Briar and Madison, 1992. The hydrogeological boundaries identified in **Figure 3-24** are not distinct in that along the margins of the valley, shallow wells penetrate the Helena Valley-Fill Aquifer, while deep wells may be completed in the bedrock aquifers. The hydrogeological units discussed below include the North Hills, the Helena Valley-Fill Aquifer, the Scratchgravel Hills, and the South Hills. Groundwater generally flows from the Helena Valley north towards Lake Helena where the systems discharge their flow. Measurements of depth to static groundwater are heavily influenced by irrigation practices in the valley and by spring runoff.

Figure 3-24
Generalized Bedrock Geologic Map



3.11.4.1 North Hills

Geology and Aquifer Properties

Faults and fractures are the principal pathways for the flow of water in the North Hills Precambrian bedrock. These faults and fractures interconnect in a variable way forming a system of independent aquifers, rather than a continuous aquifer (DEQ North Hills CGA Final EA, 2002). As a result, the well depths, water levels, and yields vary spatially over short distances. Additionally, the variable amount of water that can be transmitted and stored in the faults and fractures determines the yield, water level response to pumping, and fluctuations in recharge. Recharge of the groundwater in the North Hills occurs from infiltration of precipitation, infiltration of stream flow, and from leakage from the Helena Valley Irrigation Canal and infiltration of applied irrigation water. Precipitation in the North Hills is approximately 25 to 41 centimeters (10 to 16 inches) annually, which is minor compared to the annual evapotranspiration rate in the Helena area of roughly 76 centimeters (30 inches). As a result, recharge from precipitation only occurs during large precipitation and snowmelt events when the soil moisture deficit and evapotranspiration is overcome. Discharge from the North Hills bedrock is mainly through well-water withdrawals for domestic use, stock use and by subsurface discharge to the Helena Valley-Fill Aquifer along the southern margin.

Water Availability and Supply

Thamke statistically analyzed water-level trends in 12 wells in the North Hills for the period January 1992 through May 1998. Of the 12 wells monitored, two wells indicated a decreasing water level trend, two wells indicated an increasing trend, and eight wells indicated no trend. However, since 1998 all of the six wells monitored by the USGS in the North Hills region have exhibited a decline in water levels and there are reports of 30 dry wells in the region. The declining water levels coincide with below average precipitation for the region; however, increased groundwater use may be compounding the drought conditions (DEQ North Hills CGA Final EA, 2002).

The North Hills region has become a temporary controlled groundwater area (CGA) as of October 11, 2002. A petition signed by groundwater users in the affected region initiated the action. In order for an area to be designated a controlled groundwater area, one or more of the following factors must be present:

- ▶ Groundwater withdrawals are in excess of recharge.
- ▶ Excessive withdrawals are likely to happen in the near future because of increased use.
- ▶ Significant disputes exist regarding priority and use of rights.
- ▶ Groundwater levels or pressures are in decline.
- ▶ Excessive withdrawals may cause contamination or decreased water quality.

- ▶ Groundwater quality is unsuited for a specific beneficial use.

Water Quality

Fifteen wells were sampled between 1994 and 1996 in the North Hills area to determine the water chemistry.

Nitrate concentrations from the 15 wells ranged from 0.05 to 17 mg/L, and were greater than the maximum contaminant level (MCL) of 10 mg/L in one of the wells sampled (Thamke 2000). The inferred sources of nitrate were human or animal waste.

Nitrate-nitrogen (NO₃-N) in groundwater may result from point sources such as sewage disposal systems and livestock facilities, non-point sources such as fertilized cropland, parks, golf courses, lawns, and gardens, or naturally occurring sources of nitrogen.

Concentrations of trace elements in the groundwater were generally low and did not exceed the MCLs established by the EPA. The total-recoverable iron concentration from two of the wells sampled in Thamke's study exceeded the secondary maximum contaminant level (SMCL) set by the EPA for public drinking water supply. The source of iron was not determined (i.e., pluming or bedrock).

3.11.4.2 Helena Valley-Fill Aquifer

Geology and Aquifer Properties

A major alluvial aquifer, the Helena Valley-Fill Aquifer system, lies beneath the Helena Valley floor supplying drinking water for the majority of the population located outside the municipal service areas. Groundwater in the area is shallow and the soils are fine to coarse, thus allowing for both horizontal and vertical movement of groundwater within the system. This aquifer is a highly productive system, however it is vulnerable to contamination. The aquifer covers about 168 square kilometers (65 square miles) and is sustained by stream infiltration (15%), irrigation infiltration (39%), and bedrock groundwater contributions (46%). The *Helena Valley Irrigation District (HVID) Plan* states, "Groundwater in the Helena area is the sole source for drinking water for over 27,150 citizens, approximately 55% of the local population." Groundwater discharge from the aquifer is to well-water withdrawals for domestic and stock use (2%), discharge to streams and drains (41%), and subsurface flow to Lake Helena (57%) (Briar and Madison, 1992).

The Helena Valley-Fill Aquifer provides water through approximately 5,000 domestic wells and 60 public water supplies. Many of these wells are less than 21.3 meters (70 feet deep), and seasonal fluctuations in static water levels can be seen within these shallow wells.

Water Availability and Supply

Well logs for 1,252 wells completed in the Helena Valley-Fill Aquifer spanning across 20 sections of land in the south-central portion of the valley were examined using the Montana Bureau of Mines and Geology Groundwater Information Center Web site. A summary of field data is listed in **Table 3-17**. The maximum yield recorded was 1,500 gallons per minute (GPM) and the minimum was one GPM, with a median value of 56 GPM. The wide distributions of results are indicative of the highly variable hydraulic characteristics of alluvial deposits. No water level trend data was analyzed, as the available published reports for the Helena Valley-Fill Aquifer did not include this analysis.

Table 3-17
Well Log Data

| Retrieval Statistics* | | | | |
|------------------------------|---------------------------|---------------------------|--------------|----------------|
| Field | Maximum m (ft) | Minimum m (ft) | Count | Average |
| Total Depth | 105 (346) | 1.8 (6) | 1192 | 19.8 (65) |
| Pumping Water Level | 104 (342) | 0.6 (2) | 769 | 15.3 (50) |
| Static Water Level | 42 (137) | -0.3 (-1) | 1129 | 6.7 (22) |
| Yield (GPM) | 1500 | 1 | 1075 | 56.00 |

Summarized from the Montana Bureau of Mines and Geology Ground-Water Information Center website. The 1,252 wells analyzed spanned across 20 sections of land in the south-central portions of the valley.

*These statistics do not take any geographic, topographic, or geologic factors into consideration. Negative surface water level values are reported for water levels that are above land surface.

Water Quality

Ninety-three wells were sampled in the 1992 study conducted by Briar and Madison to determine nitrate concentrations. None of the samples exceeded 10 mg/L.

3.11.4.3 Scratchgravel Hills

Geology and Aquifer Properties

The Scratchgravel Hills are a low range of mountains just northwest of the city of Helena. The maximum elevation of the hills is 1,610 meters (5,280 feet). All of the formations in the Scratchgravel Hills have fluid flow and storage mainly in fractures and some faults (Thamke 2000).

Recharge of the groundwater in the Scratchgravel Hills occurs locally from infiltration of precipitation, infiltration of stream flow, from leakage from a small irrigation canal in the south-central part of the Scratchgravel Hills area, and leakage from the Helena Valley Irrigation Canal near the eastern edge of the area. Infiltration of applied irrigation water is also a source of recharge for the bedrock. Precipitation in the

Scratchgravel Hills is approximately 25 to 33 centimeters (10 to 13 inches) annually, which is minor compared to the annual evapotranspiration rate in the Helena area of roughly 76 centimeters (30 inches). As a result, recharge from precipitation only occurs during large precipitation and snowmelt events when the soil moisture deficit and evapotranspiration is overcome. Discharge from the Scratchgravel Hills bedrock is mainly through well-water withdrawals for domestic and stock use and by subsurface flow toward and probable discharge to Sevenmile Creek, Tenmile Creek, and, during parts of the year, to Silver Creek. Discharge from the bedrock also occurs as subsurface flows to the east to the Helena Valley-Fill Aquifer (Thamke 2000).

Water Availability and Supply

The well depths, water levels, and yields vary over short distances due to the patterns of the faults and fractures in the Scratchgravel Hills. Thamke monitored 16 wells monthly in the Scratchgravel Hills area. During the period of the study (1993 to 1998), water levels increased intermittently in response to snowmelt and rain, and, locally, in response to seasonal leakage from a small irrigation canal. Water levels decreased mostly during the summer months in response to water withdrawals and natural discharge.

Water Quality

Eight wells were sampled between 1994 and 1996 in the Scratchgravel Hills area to determine the water chemistry. Nitrate concentrations from the eight wells were greater than 10 mg/L in one of the wells sampled (Thamke 2000), likely impacted by human activities. The inferred sources of nitrate for two of the wells in the area were listed as organic nitrogen from soil or a combination of sources including human or animal waste (Thamke 2000).

3.11.4.4 South Hills

Geology and Aquifer Properties

The Bald Butte fault zone trends northwest through the northern portions of the South Hills. Additionally, there are a series of northeast trending faults in this area. The majority of the formations in the South Hills have fluid flow and storage mainly in fractures and some faults (Thamke 2000).

Recharge of the groundwater in the South Hills occurs locally from infiltration of precipitation, infiltration of stream flow, and from infiltration of municipal water supplies applied to lawn irrigation in the city of Helena. The upper elevations may provide more frequent recharge from precipitation; however, it is still equal to or less than the annual evapotranspiration rate in the Helena area of roughly 76 centimeters (30 inches). As a result, recharge from precipitation for the South Hills region only occurs during large precipitation and snowmelt events when the soil moisture deficit and evapotranspiration is overcome. Discharge from the South Hills bedrock is mainly through well-water withdrawals for domestic and stock use and by subsurface flow

toward and probable discharge to Colorado Gulch, Tenmile Creek, and Prickly Pear Creek. Discharge from the bedrock also occurs as subsurface flows northward to the Helena Valley-Fill Aquifer (Thamke 2000).

Water Availability and Supply

During the 1993 to 1998 study, water levels increased intermittently in response to snowmelt and rain, and, locally, in response to seasonal leakage of stream flow and infiltration from the city of Helena water supply due to lawn irrigation. Water levels decreased mostly during the summer months in response to water withdrawals and natural discharge.

Water Quality

Eighteen wells were sampled between 1994 and 1998 in the South Hills area to determine the water chemistry. Nitrate concentrations from the 18 wells ranged from 0.05 to 24 mg/L, and were greater than the MCL of 10 mg/L in two of the wells sampled. The inferred sources of nitrate for two of the wells in the area were listed as human waste (Thamke 2000).

3.11.4.5 Municipal Water Supplies

Helena utilizes several water resources to supply the daily demands of the growing community. There are over 50 public or community water facilities located in the Helena area. The major facilities are Helena and East Helena that serve about 60% of the population. The principal resources are the Tenmile Creek watershed, Chessman and Scott Reservoirs and the Tenmile Water Treatment Plant (located about 13 kilometers [8 miles] west of the city); this system handles about 90% of the average daily use and 60% of the maximum daily use. The other principal water resource is the Missouri River, which is used to meet peak demands in the summer. The Missouri River Water Treatment Plant handles about 30% of the maximum daily use, however this facility is in poor condition.

The city of East Helena utilizes two sources of water to meet its needs. A collection gallery located on McClellan Creek (about 5 kilometers [3 miles] south of the city) captures surface/groundwater that is piped into the community system. This system meets 100% of the average daily demand of the community. A well field located north of the city along Wylie Drive produces groundwater from the Helena Valley-Fill Aquifer. This system provides supplemental water to meet the maximum daily demand.

Outside the municipal water service areas of Helena and East Helena, the population of the study area relies upon groundwater from the Helena Valley-Fill Aquifer as a drinking water supply. Beyond the limits of this aquifer, water supplies are obtained from more limited bedrock aquifer systems or small alluvial aquifer systems associated with variable stream courses. Water supply for lower density suburban and

rural development is generally provided by individual on-site wells. In Jefferson County, the Montana City area relies heavily, if not entirely, upon groundwater. The systems that serve the needs of the community, restaurants, and schools consist of clusters of wells that are considered public water supply systems.

Wellhead protection for water supplies is an issue of concern. Water supply for the lower density suburban and rural development is generally provided by individual on-site wells. Current design standards require minimum well depths, well production, and separations. However, no analysis has been done of the cumulative effects of development on the quantity or quality of the water supply. There are several locations in the West Helena Valley where older subdivision development provided for individual wells and/or individual wastewater treatment systems on small lots, where wells are located in a shallow aquifer zone, and where soils have some constraints for treatment of effluent. These locations have a higher potential for contamination of public water supplies from domestic uses such as increased nitrate levels. The Lewis & Clark County Water Quality Protection District has collected well data in areas experiencing water quality problems, particularly where there are areas of dense development, depth to groundwater is high, and where septic system siting is of concern. In these areas, septic leaching has resulted in high levels of nitrate and chlorides, both having a negative impact on water quality and human health.

The city of East Helena has a Source Water (Wellhead) Protection Program designed to protect groundwater used for public supply. This program emphasizes local control, education, and training for professionals working with drinking water systems. Similar to the Source Water Protection Program, is the Source Water Assessment Program. The Water Quality Protection District is currently working with the DEQ to complete source water assessments for public water supplies in the study area. This program establishes procedures to delineate and assess the source of water used by public water systems. This monitoring program expands upon existing groundwater monitoring throughout the state of Montana. Once the program is established, wells can be sampled to assess long-term changes in water quality.

3.12 Wetlands

This section describes the wetland resources in the I-15 Corridor study area. The study area for the wetlands survey encompasses 92 meters (300 feet) from edge of pavement. Additionally, the study area extended 0.8 kilometer (0.5 mile) from the interstate at major intersections. Wetlands are areas of transition between aquatic and terrestrial ecosystems characterized by a water supply sufficient to support vegetation adapted for growing in wet soils. Wetlands frequently support a wide variety of plant and wildlife species and provide a number of important functions, including streambank stabilization, water quality protection, and water storage.

Wetlands and waters of the United States are regulated by the U.S. Army Corps of Engineers (Corps) under Section 404 of the Clean Water Act (CFR 33.323). The act states that any discharge of dredged or fill material into such waters requires a permit by the Corps. Executive Order 11990, Protection of Wetlands, signed in 1977, also provides protection for wetlands.

A field survey, delineation, and MDT Function/Value Assessment of study area wetlands were conducted in September 2001 and July 2002 in accordance with the Corps' 1987 *Wetland Delineation Manual* and Executive Order 11990. Detailed information on the wetlands in the study area is presented in the *Final Biological Resources Report*, August 2003 prepared by Land & Water Consulting, Inc.

A total of 22 wetlands (including sub-sites) covering approximately 9 hectares (23 acres) were found in the study area (see **Table 3-18**). The 22 wetland sites were classified under nine hydrogeomorphic types and were of MDT Function/Value Assessment Categories II, III, or IV. The MDT Montana Wetland Assessment Method rates the functions and values of wetlands from Category I (highest) through Category IV (lowest). No Category I wetlands were found in the study area. The majority of the wetlands in the study area are rated Category IV. See **Figure 3-25** for general location of delineated wetlands.

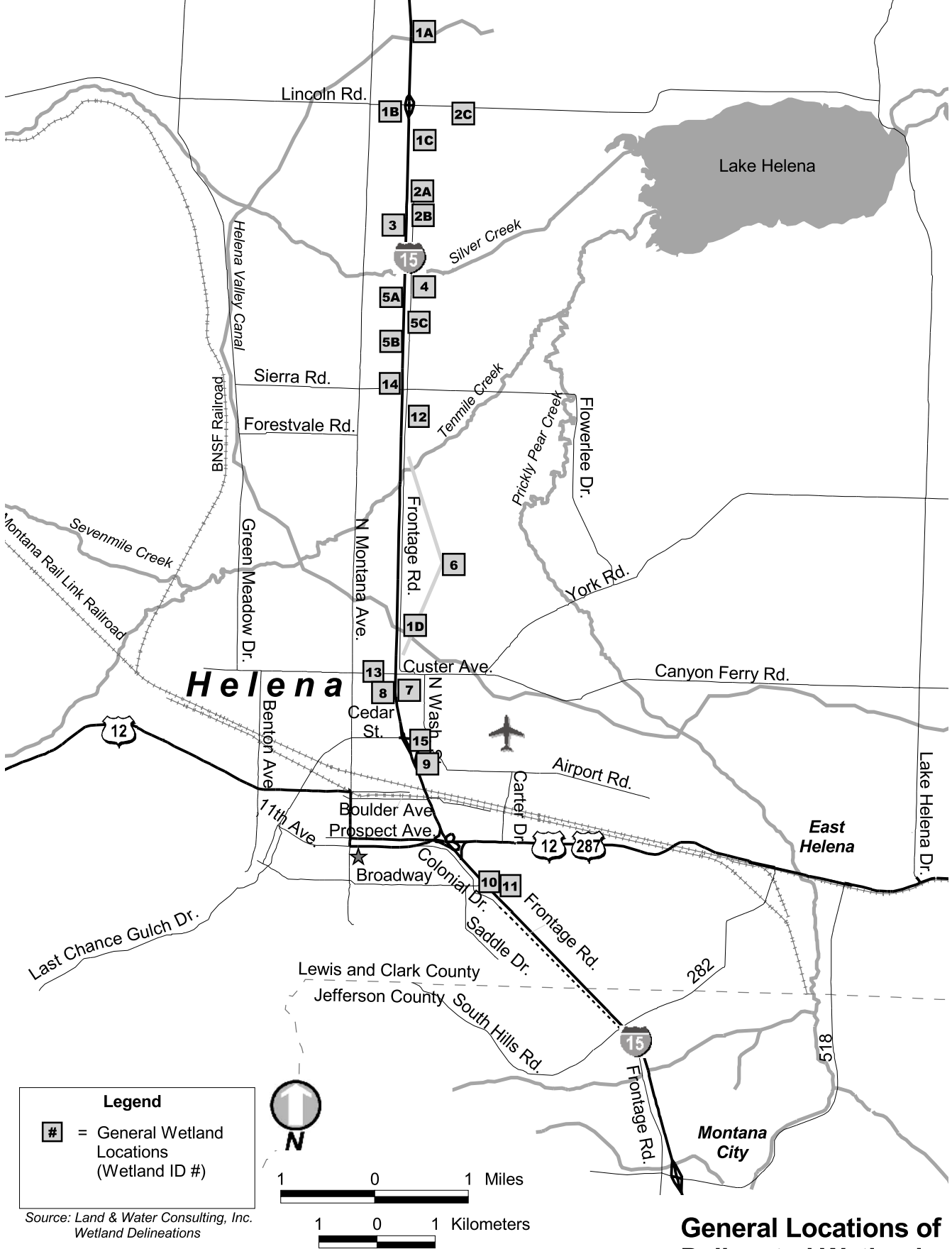
3.12.1 Clean Water Act Section 404 Jurisdiction

Table 3-18 indicates whether or not wetlands are likely to fall under Corps jurisdiction with respect to Section 404 of the federal Clean Water Act (CWA). This preliminary determination is based upon published guidance and conversations with Corps staff in the Helena Regulatory Office (Tillinger personal communication, December 12, 2001). It should be noted, however, that the Corps and the EPA reserve the right to determine jurisdiction on a case-by-case basis. Jurisdiction will ultimately be decided by the Corps relative to each of the wetlands identified along the I-15 Corridor.

Table 3-18
Summary of Wetland Function/Value Ratings and Classifications

| Wetland Sites | Potential Corps Jurisdiction | MDT Function/Value Assessment Category | Estimated Wetland Area (ha/ac) | Type of Wetland |
|-------------------|------------------------------|--|--------------------------------|--|
| 1A, 1D, 5B, 5C | Yes | IV | .89/2.2 | Irrigation ditch/canal, drainage ditch: Emergent |
| 1B, 1C, 2A, 2C, 6 | No | IV | 1.3/3.2 | Drainage and irrigation ditches: Emergent |

continued



General Locations of Delineated Wetlands

Figure 3-25

Table 3-18 (continued)
Summary of Wetland Function/Value Ratings and Classifications

| Wetland Sites | Potential Corps Jurisdiction | MDT Function/Value Assessment Category | Estimated Wetland Area (ha/ac) | Type of Wetland |
|----------------------|-------------------------------------|---|---------------------------------------|--|
| 2B, 5A, | Yes | III | .97/2.4 | Ditches providing fish habitat: Emergent |
| 3, 14 | No | IV | .4/1 | Borrow pits: Emergent and Scrub-Shrub |
| 4 | Yes | II | .20/.5 | Borrow pit depression with open water: Emergent |
| 7, 15 | No | IV | .32/.8 | Roadside drainage ditches: Emergent |
| 8 | No | III | 1.5/3.8 | Stormwater detention ponds: Emergent, Scrub-Shrub |
| 13 | No | III | 1.2/2.9 | Isolated marsh: emergent scrub/shrub |
| 9 | No | III | .12/.3 | Unnamed drainage remnant: Emergent |
| 10, 11 | Yes | III | .12/.3 | Unnamed drainages: Emergent |
| 12 | No | II | 2.1/5.1 | Borrow pit depression: Emergent, Scrub-Shrub, Forested |
| Total | | | 9.3/23 | |

On January 9, 2001, the U.S. Supreme Court issued a decision that the Corps lacks the authority to regulate isolated wetlands via the "Migratory Bird Rule" [*Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers*, 531 U.S. 159 (2001) (SWANCC)]. As a result of the court decision, many isolated wetlands (not connected or adjacent to other Waters of the U.S.), which previously fell under Corps authority, are now unregulated for Section 404 purposes.

Generally, the Corps maintains jurisdiction over wetlands that are hydrologically charged by irrigation seepage as long as the seepage is considered "normal circumstances" for the wetlands it creates. The Corps does not generally maintain jurisdiction over wetlands in artificially irrigated areas unless: the wetland has additional hydrological sources, the wetland is of significant regional or local value, or elimination of the irrigation could not be accomplished in the near future.

According to published guidance, the Corps generally does not consider ditches excavated on dry land as jurisdictional “waters of the United States.” It is the Corps’ intent that jurisdiction of these areas be taken only in exceptional cases, and that normally they will not regulate the filling of any ditch that was originally excavated on dry land. However, the Corps’ Omaha District has recently indicated that excavated irrigation and drainage ditches may be considered jurisdictional if they have a downstream surface connection to other Waters of the U.S. (Tillinger personal communication, December 12, 2001).

Based on the guidance cited above, the following wetlands were determined likely to be considered jurisdictional: 1A, 1D, 2B, 4, 5A, 5B, 5C, 10, and 11. The remaining sites, 1B, 1C, 2A, 2C, 3, 6, 7, 8, 9, 12, 13, 14, and 15 are likely to be considered non-jurisdictional. However, as stated above, the Corps will make the final determinations regarding jurisdiction.

Wetlands are also protected by Executive Order 11990, which implements a “no net loss” wetland policy with respect to federal actions and FHWA regulations on Mitigation of Impacts to Wetlands and Natural Habitats (23 CFR 777). According to FHWA guidance following the SWANCC ruling, EO 11990 will continue to cover many wetlands excluded from regulation under Section 404 of the CWA by the January 2001 court ruling. Such wetlands include isolated, intrastate wetlands, such as prairie potholes and vernal pools. However, FHWA has imposed new limits on the extent to which EO 11990 will be applied. The guidance is as follows:

FHWA will not apply EO 11990 to drainage ditches, either highway or for other purposes, which were not originally excavated in Waters of the U.S. (as currently defined), or to sites exhibiting wetland characteristics which are solely caused and supported by human activities, such as but not limited to, stormwater runoff which is concentrated by man-made ditches or agricultural irrigation leakage, and which are not considered jurisdictional Waters of the U.S. by the Corps of Engineers.

Consequently, EO 11990 is unlikely to apply to sites 1B, 1C, 2A, 2C, 6, 7, 8, and 15 on the I-15 Corridor project, but may apply to sites 3, 9, 12, 13, and 14.

3.12.2 Wetland Site Descriptions

Wetlands 1A, 1B, 1C, 1D, 2A, 2C, 5B, 5C, and 6 are associated with either the Helena Valley Irrigation Canal or other irrigation or drainage ditches in the valley. Narrow wetland fringes (<1 meter [<3.2 feet]) occur either along the ditch banks or within the entire ditch. Common emergent and wet meadow species include watercress (*Nasturtium officinale*), meadow foxtail (*Hordeum jubatum*), barnyard grass (*Echinochloa crus-galli*), water horehound (*Lycopus americanus*), reed canary

grass (*Phalaris arundinacea*), hardstem bulrush (*Scirpus acutus*), cattail (*Typha latifolia*), common spike rush (*Eleocharis palustris*), and redtop (*Agrostis alba*). These wetlands are rated Category IV.

Wetlands 2B and 5A are associated with the Silver Creek ditch. 2B is a narrow drainage ditch bottom wetland and 5A is a narrow wetland fringe similar to those associated with other irrigation ditches described above. However, this creek/ditch has a direct tie to Lake Helena, and, therefore, supports a fisheries spawning/rearing resource. Wetland 2B, a drainage ditch that feeds into 5A from the north and south, also provides fish habitat. Hydrology within Wetland 5A is primarily provided by irrigation water from an upstream lateral ditch and, most significantly, groundwater. Wetlands 2B and 5A are rated Category III.

Wetlands 3 and 14 are small, shallow borrow pit depressions that intercept the local groundwater table for a long-enough duration during the growing season to support wetlands vegetation. Although heavily grazed and trampled, Site 3 supports a variety of wet meadow and emergent marsh species including redtop, foxtail barley, hardstem bulrush, sloughgrass (*Beckmannia syzigachne*), arrow-grass (*Triglochin palustre*), and jointed rush (*Juncus articulatus*). Wetland 14 is a very small scrub-shrub site exhibiting marginal evidence of hydrology. Species include sandbar willow (*Salix exigua*), peachleaf willow (*Salix amygdaloides*), meadow foxtail, redtop, and prickly sow-thistle (*Sonchus arvensis*). Wetlands 3 and 14 are rated Category IV.

Wetland 4 is an open water pond/borrow pit with the western edge within the study area. The wetland fringe around the pond is comprised of meadow foxtail (*Alopecurus pratensis*), reed canary grass, cattail, common spike rush, wooly sedge (*Carex lanuginosa*), Canada thistle (*Cirsium arvense*), and redtop. A man-made waterfowl nesting platform occurs near the center of the open-water pond outside of the study area. This wetland likely provides habitat for waterfowl, shorebirds, herptiles (reptiles and amphibians), and small mammals and is rated Category II.

Wetlands 7 and 15 are low quality roadside ditch wetlands vegetated with common wetland species including redtop, hardstem bulrush, cattail, meadow foxtail, and Canada thistle. Site 7 occurs immediately south of Custer Avenue and receives hydrology from surface flow out of the city stormwater basins north of Kmart (see Wetland 8 below). Wetland 15, within the roadside ditch at the Cedar Street interchange, has been subject to major impacts from a highway reconstruction staging area located here. Wetlands 7 and 15 are rated Category IV.

Wetlands 8 and 13 are comprised of emergent marsh and shrub/scrub habitat. Wetland 8 is a series of connected stormwater retention basins on the west side of the interstate north of the Kmart store on Cedar Street. Two of the three retention cells fall within the study area. Common plant species include hardstem bulrush,

cattail, meadow foxtail, reed canary grass, sandbar willow, peachleaf willow, and young cottonwoods (*Populus spp.*). This wetland likely provides habitat for waterfowl, shorebirds, songbirds, herptiles (reptiles and amphibians), small mammals, and occasionally deer. Helena plans to remove a substantial amount of vegetation that has grown in over the years. Wetland 13 is a groundwater-fed shrub/scrub and emergent marsh complex on both sides of Custer Avenue west of I-15 with extensive encroachment from the roadway and adjacent business development. Predominantly cattail marsh, vegetation also includes hardstem bulrush, common spike rush, meadow foxtail, licorice (*Glycyrrhiza lepidota*), common duckweed (*Lemna minor*), and yellow willow (*Salix lutea*). The complex provides marginal habitat for small mammals, songbirds, and occasionally mule deer. The wetlands were rated Category III.

Wetlands 9, 10, and 11 are wetland fringes associated with natural drainage features that have been heavily encroached upon as Helena has expanded. Wetland 9 appears to receive hydrology from spring activity on railroad property west of the interstate. Common plant species include cattail, Canada thistle, Baltic rush (*Juncus balticus*), Nebraska sedge (*Carex nebrascensis*), common spike rush and sandbar willow (*Salix exigua*). Sites 10 and 11 border narrow perennial drainages south of the Capitol interchange that flow through extensive development on the west side of the roadway. The wetland fringes are comprised of cattail, redtop, foxtail barley, reed canary grass, common willow-herb (*Epilobium ciliatum*), curly dock (*Rumex crispus*), and rabbit's-foot grass (*Polypogon monspeliensis*). Habitat value is minimal, and these sites do not support a fisheries resource. Wetlands 9, 10, and 11 are rated Category III.

Wetland 12, commonly referred to as the Forestvale gravel pit, has developed into a substantial wetland with the western edge within the study area. The wetland is a mix of forested, shrub/scrub and emergent marsh habitat, and vegetation includes cattail, hardstem bulrush, redtop, Baltic rush, beaked sedge (*Carex rostrata*), common spike rush, and narrow-leaved cottonwood (*Populus acuminata*). The area provides habitat for waterfowl, shorebirds, songbirds, herptiles (reptiles and amphibians), small mammals, and white-tailed deer and is rated Category II.

3.13 Vegetation, Wildlife and Aquatic Resources

3.13.1 Vegetation

The I-15 study area is primarily within an existing highway right-of-way, which has been disturbed by past highway-related activities. Field surveys were conducted during September 2001 and July 2002 in an area within 92 meters (300 feet) of the edge of pavement on both sides of I-15. Common roadside ditch species include introduced crested wheatgrass (*Agropyron cristatum*), smooth brome (*Bromus*

inermis), Kentucky bluegrass (*Poa pratensis*), yellow sweet clover (*Melilotus officinalis*), common mullein (*Verbascum thapsus*), and spotted knapweed (*Centaurea maculosa*). Croplands adjacent to the interstate are comprised primarily of alfalfa (*Medicago sativa*), domestic wheat, and barley. Residential landscaping includes ornamental flowers, native and introduced trees and shrubs, and bluegrass lawns. Native range communities between the Capitol and Montana City interchanges are comprised primarily of the needle-and-thread (*Stipa comata*)/blue grama (*Bouteloua gracilis*) habitat type.

Species common along the numerous irrigation ditches that flow under and adjacent to the roadway include showy milkweed (*Asclepias speciosa*), smooth brome, yellow sweet clover, asparagus (*Asparagus officinalis*), prickly sow-thistle (*Sonchus arvensis*), rose (*Rosa woodsii*), meadow foxtail (*Alopecurus pratensis*), redtop (*Agrostis alba*), and Canada thistle (*Cirsium arvense*). Scattered narrow-leaved cottonwoods (*Populus angustifolia*) occur in the Tenmile Creek and Forestvale gravel pit areas.

3.13.2 Noxious Weeds

Executive Order 13112, signed on February 3, 1999, addresses federal agency responsibilities with respect to invasive species (noxious weeds). As a partially federally funded action, the project is subject to the provisions of EO 13112. According to the Invaders Database System (2001), 15 noxious weeds have been identified in Lewis & Clark County over the last 20 years. These include hoary cress/whitetop (*Cardaria draba*), diffuse knapweed (*Centaurea diffusa*), spotted knapweed, Russian knapweed (*Centaurea repens*), oxeye daisy (*Chrysanthemum leucanthemum*), Canada thistle, field bindweed (*Convolvulus arvensis*), hound's-tongue (*Cynoglossum officinale*), leafy spurge (*Euphorbia esula*), orange hawkweed (*Hieracium aurantiacum*), dalmation toadflax (*Linaria dalmatica*), sulfur cinquefoil (*Potentilla recta*), tall buttercup (*Ranunculus acris*), Tamarix complex (*Tamarix* spp.), and common tansy (*Tanacetum vulgare*). Eleven of these species also have been recorded in Jefferson County. Most of these weeds are Category 1 noxious weeds as defined by the state of Montana. Orange hawkweed, tamarix, and tall buttercup are Category 2 noxious weeds.

Five of the noxious weed species listed above were commonly encountered in the study area:

- ▶ Spotted knapweed
- ▶ Diffuse knapweed
- ▶ Hoary cress/whitetop
- ▶ Canada thistle
- ▶ Leafy spurge

Individual plants or small infestations were noted along much of the I-15 Corridor; however, large infestations were not noted within the study area.

3.13.3 Wildlife

Wildlife habitat within the study area has been modified significantly since pre-settlement times and continues to experience change as native range and agricultural cropland are converted to residential and commercial development. Disturbed areas within the study area have been reseeded to native and introduced grass species that provide habitat for small rodents, ground nesting birds, and birds of prey. Wetland habitat is associated with the numerous irrigation canals and gravel pits in the Helena Valley and supports a variety of wildlife species including mule and white-tailed deer, various small mammals, amphibians and reptiles, songbirds, waterfowl, and birds of prey.

3.13.3.1 Mammals

Of the 108 mammal species identified in the state, 68 are known or thought to occur in the study area. Irrigated crop and grazing lands in the Helena Valley at the north end of the study area provide habitat for a variety of small mammals, such as skunks (*Mephitis mephitis*), cottontails (*Sylvilagus nuttallii*), Columbian ground squirrels (*Spermophilus columbianus*), red fox (*Vulpes vulpes*), badger (*Taxidea taxus*), voles, and mice. White-tailed deer (*Odocoileus virginianus*) and porcupine (*Erethizon dorsatum*) are common in the vicinity of Tenmile Creek, while mule deer (*Odocoileus hemionus*) are more numerous between the Capitol and Montana City interchanges. Pronghorn antelope (*Antilocapra americana*) are common near the north and south ends of the study area. Mammals observed during field reconnaissance surveys included mule and white-tailed deer, Columbian ground squirrel, and red fox.

3.13.3.2 Amphibians and Reptiles

Amphibians likely to occur near wetland and riverine habitats within the study area include long-toed salamander (*Ambystoma macrodactylum*), western toad (*Bufo boreas*), and spotted frog (*Rana pretiosa*). Reptiles likely to be present within the study area include painted turtle (*Chrysemys picta*), rubber boa (*Charina bottae*), racer (*Coluber constrictor*), western rattlesnake (*Crotalus viridis*), gopher snake (*Pituophis catenifer*), western terrestrial garter snake (*Thamnophis elegans*), and common garter snake (*Thamnophis sirtalis*). No amphibians or reptiles were seen during the September 2001 and July 2002 field reconnaissance surveys.

3.13.3.3 Birds

Over 180 bird species have been observed within the vicinity of the study area. This high species diversity is likely due to the presence of the Missouri River and Canyon Ferry, Hauser, and Holter Reservoirs. Common breeders in the study area include waterfowl and shorebirds near wetland areas, flycatchers, warblers, raptors, finches,

and thrushes along the Tenmile Creek riparian zone, and western meadowlarks (*Sturnella neglecta*), sparrows, crows (*Corvus brachyrhynchos*), ravens (*Corvus corax*), magpies (*Pica pica*), bluebirds, and blackbirds in various other habitats represented along the I-15 Corridor.

Birds observed in the immediate study area during field surveys were mallard (*Anas platyrhynchos*), Canada goose (*Branta canadensis*), red-tailed hawk (*Buteo jamaicensis*), common raven, red-winged blackbird (*Agelaius phoeniceus*), belted kingfisher (*Ceryle alcyon*), yellow warbler (*Dendroica petechia*), song sparrow (*Melospiza melodia*), western meadowlark, and ring-billed gull (*Larus delawarensis*).

3.13.3.4 Animal/Vehicle Collisions

Mule and white-tailed deer as well as small mammals such as skunks, porcupines, rabbits, and fox are routinely killed on I-15 throughout the study area. According to Montana Highway Patrol records for 1996 through 2001, 55 deer/vehicle collisions were reported on I-15 between the Montana City and Lincoln Road interchanges. Approximately 70% of the collisions occurred between the Capitol and Montana City interchanges, an area where mule deer routinely cross the interstate from bedding and security habitat on the west side to feeding areas on the east. Additionally, white-tailed deer routinely cross the interstate in the vicinity of Tenmile Creek and are occasionally killed on the highway.

Opportunities for deer and other animals to cross beneath the interstate are present in two locations within or near the study area. During the 2001 field reconnaissance, deer tracks were visible underneath the interstate bridges at Tenmile Creek and at the abandoned railroad underpass immediately south of the study area's southern terminus just north of Prickly Pear Creek. Though not documented as wildlife crossings, drainage culverts are also likely passageways for small mammals.

3.13.4 Aquatic Resources

The I-15 Corridor traverses several irrigation ditches as well as Silver Creek and Tenmile Creek in the Helena Valley. Irrigation canals traversed by the roadway have seasonal flows from late spring through early fall.

Silver Creek, a perennial tributary of Prickly Pear Creek, is traversed by I-15 near the north end of the study area. Between Green Meadow Drive and I-15, Silver Creek has been altered over time, as irrigation facilities and other types of development have been introduced into the valley. Silver Creek is 3 to 5 meters (10 to 16 feet) wide in the vicinity of the highway. Silver Creek has a narrow emergent wetland fringe, with no shrubs or trees present in the study area. Silver Creek is listed on DEQ's 2002 303(d) list of impaired waterbodies for reasons relating to flow alteration, metals, other habitat alterations, and presence of priority organics.

According to Montana Rivers Information System (MRIS), Silver Creek has been assigned a final fisheries resource value of "moderate" (MRIS 2001). Fish species present in Silver Creek include brook trout (*Salvelinus fontinalis*; year-round resident), rainbow trout (*Oncorhynchus mykiss*; resident and spawning), brown trout (*Salmo trutta*; resident and spawning), westslope cutthroat trout (*Oncorhynchus clarki lewisi*; year-round resident), mottled sculpin (*Cottus bairdi*; year-round resident), and kokanee salmon (*Oncorhynchus nerka*; resident and spawning). Westslope cutthroat are confined to the upper reaches of Silver Creek and do not occur in the study area. Silver Creek is recognized by MFWP as a spawning stream for rainbow trout in the spring and brown trout in the fall. Fishing is precluded by MFWP in Silver Creek during the rainbow and brown trout spawning runs. Some fish, especially resident brook trout, may utilize ditches flowing into Silver Creek in the vicinity of the interstate, especially the ditch referenced as Wetland 2B (see Section 3.12.2). Wetland 2B also may provide spawning and/or rearing habitat for rainbow, brown, and brook trout, as well as kokanee salmon.

Tenmile Creek, a perennial tributary of Prickly Pear Creek, is traversed by I-15 south of Silver Creek near the north end of the study area. A pair of clear-span concrete bridges (one each for northbound and southbound traffic) carries the creek under I-15. According to the MRIS, Tenmile Creek suffers from chronic dewatering from irrigation in the lower 21 kilometers (13 miles) of the stream, including the study area. Surface flow is typically absent from the study area beginning in mid-summer. The Tenmile Creek riparian corridor is characterized by mature cottonwoods in the overstory and a grass, forb, shrub mix in the understory. The creek has sustained extensive encroachment through the Helena area from road construction, residential and commercial development and irrigation activities. The study area reach of Tenmile Creek is listed on DEQ's 2002 303(d) list of impaired waterbodies. Probable causes of impairment include presence of elevated arsenic, cadmium, copper, lead, mercury, and zinc levels; nutrients; siltation; flow alteration; and other habitat modifications. Highway/road/bridge construction is listed as one of the numerous probable sources of impairment.

According to MRIS, Tenmile Creek has been assigned a final fisheries resource value of "moderate" (MRIS 2001). Fish species present in Tenmile Creek include brook trout (year-round resident), rainbow trout (resident and spawning), brown trout (resident and spawning), and mottled sculpin (year-round resident).

3.14 Floodplains

Executive Order 11988 (Floodplain Management, 1977) requires federal agencies to avoid, to the extent possible, long- and short-term adverse impacts associated with the occupancy and modification of floodplains, and to avoid direct and indirect

support of floodplain development wherever there is a practicable alternative. In accomplishing this objective, "each agency shall provide leadership and shall take action to reduce the risk of flood loss, to minimize the impact of floods on human safety, health, and welfare, and to restore and preserve the natural and beneficial values served by floodplains in carrying out its responsibilities."

Flooding is historically common throughout Lewis & Clark County. Major floods were recorded in June of 1975, May of 1981 and February of 1996, when a Presidential Disaster Declaration was declared. The peak of the flood season is during May and June, which usually are the wettest months of the year, with June having the most rainfall. Historically, flooding has usually been caused by heavy rainfall combined with rapid snowmelt. Flood events are commonly termed as 10-, 50-, 100- and 500-year events describing their recurrence intervals. The recurrence interval represents the average long-term period between floods of a certain magnitude, though floods can and do occur at shorter intervals.

Tenmile Creek crosses through the northwest part of the city of Helena towards Lake Helena. This area is within the 100-year floodplain for Tenmile Creek. The northeastern edge of Helena extends towards Prickly Pear Creek. Prickly Pear Creek enters the southern end of the study area in Jefferson County and crosses through East Helena. Within both areas, the depth to groundwater can be very shallow (sometimes less than 3 meters [10 feet] to groundwater).

Information for the 100-year floodplain within the I-15 study area was obtained from the June 17, 2002, revised Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRM) and the *Flood Insurance Study* for Lewis & Clark County. The limits of the floodplains and the floodways within the I-15 study area are shown in **Figure 3-23**. The floodways that cross or occur near the study area historically result from flooding by the following water resources:

- ▶ *Tenmile Creek*. Tenmile Creek drains from the southwest, flows underneath I-15 and across the Helena Valley floor to its confluence with Prickly Pear Creek. The 100-year floodplain boundaries have been mapped by FEMA in the lower portion of the watershed.
- ▶ *Sevenmile Creek*. Tributary to Tenmile Creek is Sevenmile Creek, a perennial stream that drains the northwestern portion of the study area. The only section of the stream that has been mapped for the 100-year floodplain (FEMA) is 3.2 kilometers (2 miles) above its confluence with Tenmile Creek.
- ▶ *Prickly Pear Creek*. The headwaters of Prickly Pear Creek are located in Jefferson County. This creek travels north through East Helena towards Lake Helena. The 100-year floodplain boundaries have been mapped by FEMA.

- ▶ *Silver Creek.* The headwaters of Silver Creek are located in the Marysville-Canyon Creek planning area. This creek drains from the northwest, underneath I-15, across the Helena Valley floor and directly into Lake Helena. A portion of the stream (east of Green Meadow Drive) has been mapped by FEMA for the 100-year floodplain. The 100-year floodplains have been approximated by Lewis & Clark County for an additional 8 kilometers (5 miles) to the west, but not formally mapped by FEMA.

3.14.1 Local Floodplain Regulations

In 1985 FEMA prepared detailed floodplain maps for portions of Lewis & Clark County. Some of these maps were revised in 2002. Currently, 30 floodplain maps for the Helena Valley are available. These include maps within the I-15 study area for Tenmile, Prickly Pear and Silver Creeks. The county floodplain ordinances regulate the 100-year floodplains in both Lewis & Clark and Jefferson Counties. A permit is required for development activities within a floodplain, which include buildings, bridges, culverts, wells, fill, or any other alteration of the 100-year floodplain.

3.15 Wild and Scenic Rivers

The Wild and Scenic Rivers Act of 1968, (Pub. L. 90-542 as amended; 16 U.S.C. 1271-1287) established a method for providing federal protection for certain of our country's remaining free-flowing rivers, preserving them and their immediate environments for the use and enjoyment by present and future generations. Rivers are included in the system so that they may benefit from the protective management and control of development for which the Act provides.

The segments of Tenmile Creek and Silver Creek that flow beneath I-15 within the study area are not designated Wild and Scenic Rivers nor are the other streams in the study area.

3.16 Threatened, Endangered and Sensitive Species

The Montana Natural Heritage Program (MNHP), Montana Rivers Information System (MRIS), U.S. Fish & Wildlife Service (USFWS), and Montana Fish, Wildlife & Parks (MFWP) provided information on endangered, threatened and sensitive plant, and animal species in the study area. The MNHP is the state's clearinghouse for information on Montana's native species and habitats, emphasizing those species of conservation concern.

3.16.1 Threatened or Endangered Species

Species federally listed as threatened, proposed for listing or recommended as a candidate for listing under Section 7 of the Endangered Species Act which possibly occur in the study area are listed below. A coordination letter with the USFWS dated November 4, 2002, is located in Volume 2, Appendix B. There are no endangered species identified in the study area.

- ▶ Bald eagle (*Haliaeetus leucocephalus*)—threatened
- ▶ Mountain plover (*Charadrius montanus*)—proposed threatened status has been removed by USFWS on September 9, 2003.
- ▶ Ute ladies' tresses orchid (*Spiranthes diluvialis*)—threatened
- ▶ Black-tailed prairie dog (*Cynomys ludovicianus*)-candidate

Bald Eagle

Bald eagles range throughout the western United States and Canada, and Montana's bald eagle nesting population is one of the most productive in the United States. Due to documented increases in bald eagle populations, the USFWS proposed in 1999 to remove the bald eagle from the list of threatened and endangered species.

I-15 does not fall within the home range (approximately 3.2 kilometers [2 miles]) of any active bald eagle nests; however, several active nests are known to occur within 15 kilometers (9 miles) of the highway. These include the "Brown's Gulch", "Lake Helena", "York Bridge" and "Delphay Point" territories. The Lake Helena territory is the closest at approximately 4 kilometers (2.5 miles) east of Lincoln Road and I-15 interchange. Additionally, a stretch of Hauser Lake below Canyon Ferry Dam to the east of the study area is a well-known concentration area for bald eagles between October and December.

Considering the high number of eagles within 15 kilometers (9 miles) of I-15, it is probable that bald eagles periodically pass through the study area and may spend time near the highway, especially in the Tenmile Creek area where roost and perch trees are available. A known bald eagle nest is located adjacent to Lake Helena. Bald eagles also periodically occur in the Silver Creek area, and may hunt for small prey or feed on carrion in the open fields and pastures adjacent to the interstate.

Mountain Plover

Mountain plovers utilize native short-grass prairie habitat in central Montana, Wyoming, and Colorado for breeding. At this time, the mountain plover is proposed for listing as a threatened species by the USFWS. On September 9, 2003, as published in the Federal Register, the USFWS withdrew their proposal to list the mountain plover as threatened. At this time, the specie is not even listed as a candidate

specie. Populations in North America, estimated at less than 10,000, have declined by as much as 50% in the last 35 years (USFWS 1999).

Mountain plovers were not detected during the September 2001 field surveys. However, most plovers have migrated south by that time. Follow-up surveys in July 2002 did not detect any mountain plovers either. There are no MNHP records for mountain plovers in the vicinity of the study area. Mountain plover habitat in the vicinity is limited to a small area of native shortgrass prairie near the study area's southern terminus. Due to the lack of quality breeding habitat in the study area, mountain plovers are not expected to occur in the immediate vicinity.

Ute Ladies' Tresses Orchid

Ute ladies' tresses orchid (*Spiranthes diluvialis*) was listed as a threatened species by the USFWS in 1992. Endemic to the western United States, Ute ladies' tresses orchid populations are known in Broadwater, Beaverhead, Gallatin, Jefferson, and Madison Counties in Montana.

Ute ladies' tresses orchid has never been documented in Lewis & Clark County, but was recently found in adjacent Broadwater County and is known from areas in Jefferson County but none within several miles of the study area. No Ute ladies' tresses orchids were observed during September 2001 wetland delineations when this species would have been visible. Additionally, no plants were documented during a 2001 sensitive plant survey completed for the study area.

Black-tailed Prairie Dog

Black-tailed prairie dogs occur in ten Midwestern states, including areas of Montana east of the Continental Divide. In 2000 a 12-month status review by the USFWS determined that the black-tailed prairie dog was warranted for listing as a threatened species, but precluded for listing due to higher priority species. At this time, the species is officially listed as a candidate species.

Immediately north of the Lincoln Road interchange on the west side of the interstate one prairie dog town is present but was presumed inactive based on the fact that the vegetation was not clipped and burrows showed no signs of active excavation. Evidence of prairie dog use of the highway right-of-way and adjacent fields was noted, as burrows and dirt mounds are common in this area. An active prairie dog town is present on both sides of the interstate approximately 1.5 kilometers (0.9 mile) north of the Lincoln Road interchange. Other towns have been documented in the Valley both east and west of the interstate. Dispersal and/or natural relocation of animals from the active towns to the inactive town near the Lincoln Road interchange is possible.

3.16.2 Sensitive Species

Sensitive Wildlife Species. The MNHP database was searched to determine if any state-listed sensitive species occur within the study area. The MNHP data search results showed the bald eagle as the sole known wildlife species of concern within several kilometers of the study area. The black-tailed prairie dog is also known to occur in the study area and a number of state sensitive species live in association with prairie dogs including black-footed ferrets (*Mustela nigripes*), burrowing owls (*Speotyto cunicularia*), and mountain plovers. Additional species of concern may occur as infrequent transients in the general study area. These include, but are not limited to, American white pelican (*Pelecanus erythrorhynchos*), black-crowned night-heron (*Nycticorax nycticorax*), ferruginous hawk (*Buteo regalis*), peregrine falcon (*Falco peregrinus*), black tern (*Chlidonias niger*), black-necked stilt (*Himantopus mexicanus*), and Baird's sparrow (*Ammodramus bairdii*).

Sensitive Fish Species. No sensitive fish species are known to occur in Silver Creek or Tenmile Creek within the study area. Westslope cutthroat trout (*Oncorhynchus clarki lewisi*) are present near Silver Creek headwaters, but are not present in the study area.

Sensitive Plant Species. Plant species of concern, wedge-leaved saltbush (*Atriplex truncata*) and small yellow lady's slipper (*Cypripedium parviflorum*), occur within 8 kilometers (5 miles) of the study area. No plant species of concern were observed in the study area during an August 2001 rare plant survey.

3.17 Cultural Resources

The cultural resource study area extends over a 22-kilometer (14-mile) section of I-15. Approximately 270 hectares (667 acres) were inventoried for cultural resources along the 122-meter- (400-foot-) wide corridor. The cultural resource inventory was done in consultation with the Montana State Historic Preservation Officer (SHPO) and was completed between October 2001 and August 2002. SHPO files indicate that eighteen previous Class III inventories have occurred along this corridor, with a variety of prehistoric and historic sites recorded. In addition to coordinating with the SHPO, formal consultation was initiated with the Confederated Salish and Kootenai Tribal Preservation Office and the Blackfeet Tribe Culture Committee to see if either has interests or concerns regarding this project. Copies of this correspondence are included in Volume 2, Appendix B.

Previous work and consultations indicate that there are 45 previously recorded prehistoric and historic sites within 1.6 kilometers (1 mile) of I-15. Of these sites, one is listed on the National Register of Historic Places (NRHP) and 11 (prehistoric, historic and an archaeological district) are eligible or potentially eligible for listing on the NRHP. The remaining sites are not eligible for the NRHP. In addition to these

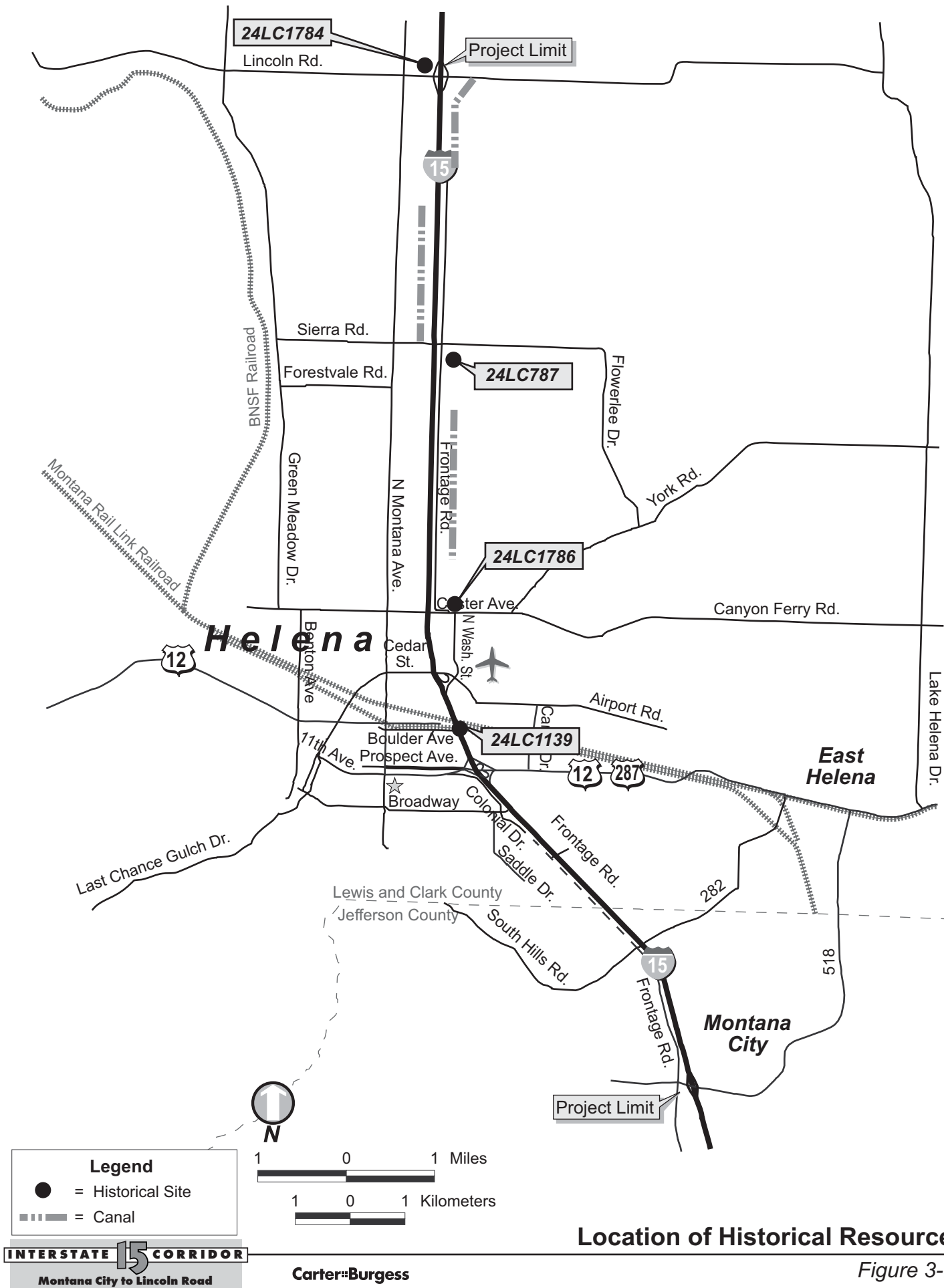
sites, the 2001 and 2002 surveys conducted for this EIS identified an additional two prehistoric sites and three historic sites within the study area that are eligible or potentially eligible for the NRHP. The potentially eligible sites would require subsurface testing to make a determination of eligibility if they were to be impacted by the project. Previously recorded sites that were determined as not eligible are not included in this evaluation of existing conditions.

Overall, 18 of the previously mentioned sites are immediately adjacent to the I-15 Corridor or within the Area of Potential Effect (APE). Of these 18, one site is already listed on the NRHP and five appear to be eligible or potentially eligible (see **Table 3-19** and **Figure 3-26**). The remaining 12 sites are not eligible. To ensure confidentiality, archaeological resources are not shown on **Figure 3-26**.

Table 3-19
Cultural Resource Sites Adjacent to I-15

| | Site Number | Site name | Type | Inside APE | NRHP Status | Reference |
|----|-------------|--|-------------------------|--|----------------------------|---------------------------------------|
| 1. | 24JF697 | Proposed Montana City Archaeological District | Archaeological District | Yes, near the Montana City interchange | Eligible | Previously recorded |
| 2. | 24JF1719 | Tipi ring site/lithic scatter | Prehistoric | Yes, within the proposed Archaeological District | Potentially Eligible | 2001 Survey |
| 3. | 24LC787 | Silver Creek School (a.k.a. Little Red School House) | Historic | Yes, near I-15 and Sierra Road | Listed in 1980 | Previously recorded |
| 4. | 24LC1139 | Northern Pacific Railroad | Historic | Yes, underneath I-15 within city limits | Eligible under Criterion A | 2001 Addendum to Previous recordation |
| 5. | 24LC1784 | Deal House | Historic | Yes, eligible buildings appear outside of the I-15 Corridor at Lincoln Road | Eligible | 2002 survey |
| 6. | 24LC1786 | Washburn Farmstead/Eddie Barbeau Home | Historic | Yes, eligible buildings appear outside of the I-15 Corridor at Custer Avenue | Eligible | 2002 survey |

Source: *Cultural Resources Report*, 2002



Previous cultural investigations include the Montana City Archaeological District (24JF697) that contains prehistoric finds which may be potentially eligible. Although the district itself was determined as eligible in 1987 by the SHPO Review Board, it has not been formally listed on the NRHP due to property owners' objections and concerns.

- ▶ **24JF697.** The Montana City Archaeological District encompasses approximately 931 hectares (2,300 acres) and contains 31 sites. These properties include quarry sites, tipi rings/stone circle sites, lithic scatter sites and open occupation sites.
- ▶ **24JF1719.** Site 24JF1719 is located in the Montana City Archaeological District within the study area. This site consists of a widely distributed lithic scatter, and several tipi rings. The lithics were flakes made from local materials and the tipi rings varied from 4 to 6 meters (14 to 20 feet). Subsurface testing of this site is needed before determination on eligibility can be made. It is estimated that 75% of the site remains intact.
- ▶ **24LC787.** The site consists of the Silver Creek School (a.k.a. Little Red School House), a remodeled schoolhouse; a log cabin; a picnic shelter; outhouses and other associated buildings. The school building, but not the other buildings, was listed in the NRHP in 1980 and the site form was updated in 1990.
- ▶ **24LC1139.** This site is a 122-meter (400-foot) segment of the Northern Pacific Railroad line that runs underneath I-15 in Helena. The segment extends approximately 61 meters (200 feet) east and west of the center of the overpass. The tracks are still used by Montana Rail Link (MRL) freight trains. It is eligible for listing in the NRHP under Criterion A for its importance to the socioeconomic development of Montana.
- ▶ **24LC1784.** The Deal House consists of a single log house that dates to 1931. The site is suggested to be representative of depression era vernacular log house construction and is recommended as eligible under Criterion C.
- ▶ **24LC1786.** The Washburn Family Dairy Farmstead and LeRoy "Eddie" Barbeau Residence. The site consists of a frame house, frame milk house/whelping house, frame unattached double garage, frame dairy barn, and frame outhouse. The site is recommended as eligible for listing under Criterion C for its representation of domestic western rural architecture.

3.18 Hazardous Waste

Hazardous waste sites are regulated by the Resource Conservation and Recovery Act (RCRA) and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). The potential for encountering hazardous waste and/or hazardous materials during construction was evaluated for this EIS through a Modified Phase 1 Environmental Site Assessment conducted in September 2001. The objective of the

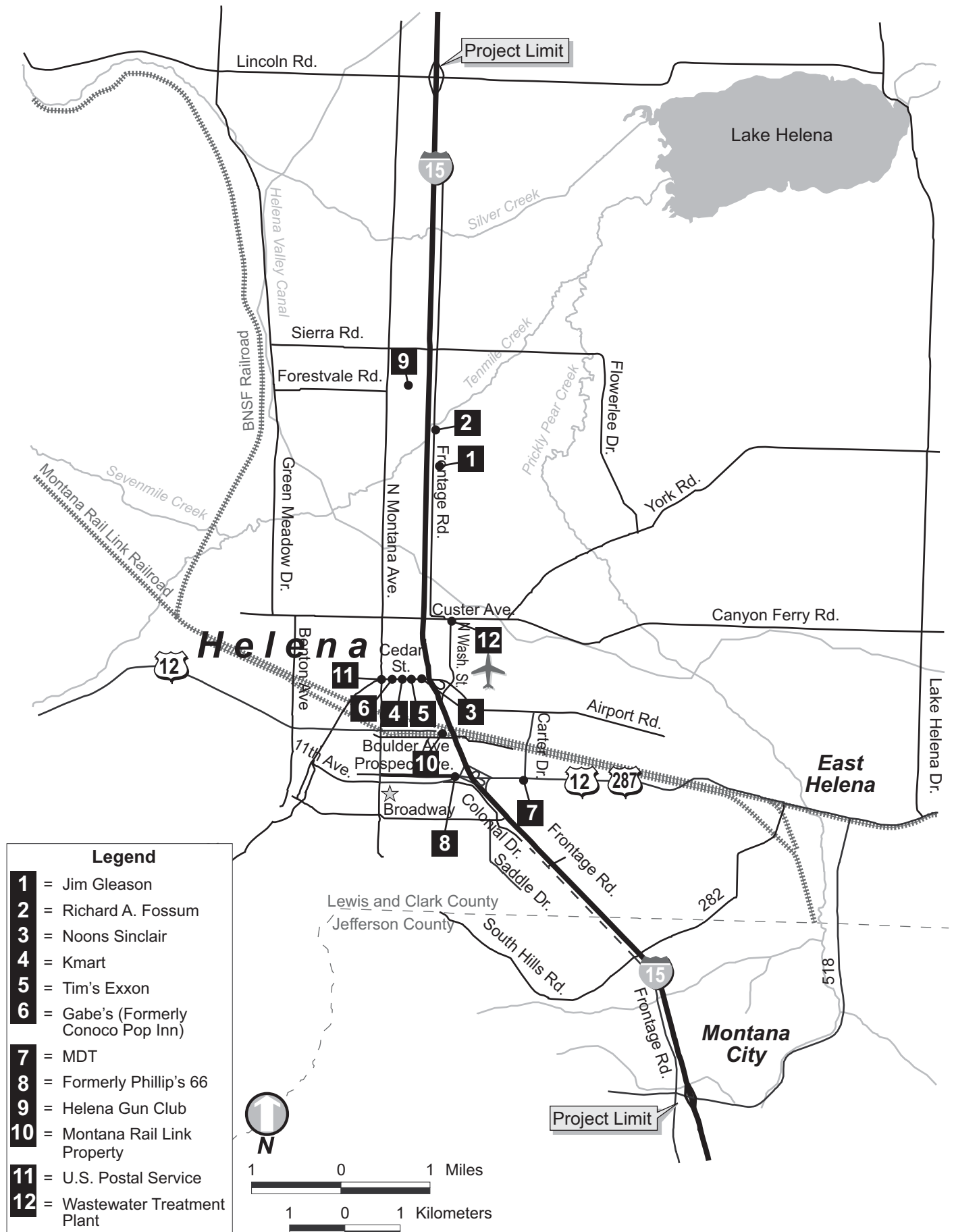
Environmental Site Assessment was to identify recognized environmental conditions in connection with the properties adjacent to the I-15 Corridor and associated interchanges where construction work could take place.

Recognized environmental conditions are the presence or likely presence of any hazardous substances, hazardous waste or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of a release of any such substances into structures on the property or into the ground, groundwater, or surface water of the property.

The Environmental Site Assessment was performed in general conformance with the scope and limitations of the American Society for Testing and Materials (ASTM) Standard Practice E 1527-00.

Based on available data, a total of 12 sites were identified that may be impacted by the construction of the alternatives under consideration. These sites are shown on **Figure 3-27**. The sites identified in the Phase I Environmental Site Assessment are as follows:

1. **Jim Gleason:** This property is located at 3705 Frontage Road. It is listed as a State Registered Underground Storage Tank (UST) site. This site is located on the east side of the I-15 Corridor.
2. **Richard A. Fossum:** This property is located at 3739 Frontage Road. It is listed as a State UST site. This site is located on the east side of the I-15 Corridor.
3. **Noons Sinclair No.22:** This property is located at 1801 Cedar Street. It is listed as a State Leaking Underground Storage Tank (LUST), UST site. The site has four active USTs and one UST that is out of service. This site is located west of the I-15/Cedar Street interchange. There is active soil and/or groundwater remediation at this site.
4. **Kmart No. 7029:** This property is located at 1700 Cedar Street. It is listed as a State UST site. The site has one UST that is out of service. Field Review of this site did not show any indication of existing USTs.
5. **Tim's Exxon:** This property is located at 1721 Cedar Street. It is listed as a State LUST, UST site. This site is located west of the I-15/Cedar Street interchange. There are four active USTs at this site. Four USTs were previously closed at this site.
6. **Gabe's (Formerly Conoco Pop Inn):** This property is located at 1701 Cedar Street and has recently opened under a new name. It is listed as a State LUST, UST site. There are three active USTs at this site. Four USTs were previously closed at this site. There is active soil and/or groundwater remediation program at this site. Remediation is still active on the site.



7. **Montana Department of Transportation:** This property is located at 2701 Prospect Street. It is listed as a State UST site. There is a UST system and vehicle maintenance facility at this site.
8. **Formerly Phillips 66 gas station:** This property is located at 2101 Prospect Avenue (now the site of Days Inn) and has closed for business. It is listed as a State UST site and has 10 inactive USTs. This site is located west of the Capitol interchange. There was not a release at this site so there is no on-going remediation.

In addition to the Phase I investigation, several site visits and investigation into different highway improvement alternatives revealed additional sites that should be included as having existing potential environmental conditions affecting construction of the alternatives under consideration. These sites are as follows:

9. **Helena Gun Club:** This property is located on Forestvale Road east of N. Montana Avenue. There is the potential for lead contamination at this site.
10. **Montana Rail Link Property:** This property is located between the Cedar Street and Capitol interchanges. The property has railways fueling facilities, depots on it and has the potential for environmental contamination typically associated with railyards (i.e. petroleum and metals). This site may also have lead contamination.
11. **U.S. Postal Service:** This property is located at 2300 North Harris. It is listed as a UST site.
12. **Wastewater Treatment Plant:** This property is located at 1708 Custer Avenue. It is listed as a UST site.

3.19 Visual Character

The I-15 Corridor can be broken down into four distinct visual character units: Commercial/Industrial/Institutional/Business; Residential/Urban; Residential/Suburban and Rural; and Natural Open Space/Undeveloped Property. These units are described below in terms of the landscape character that makes them distinct. Photo reference locations are shown on **Figure 3-28**.

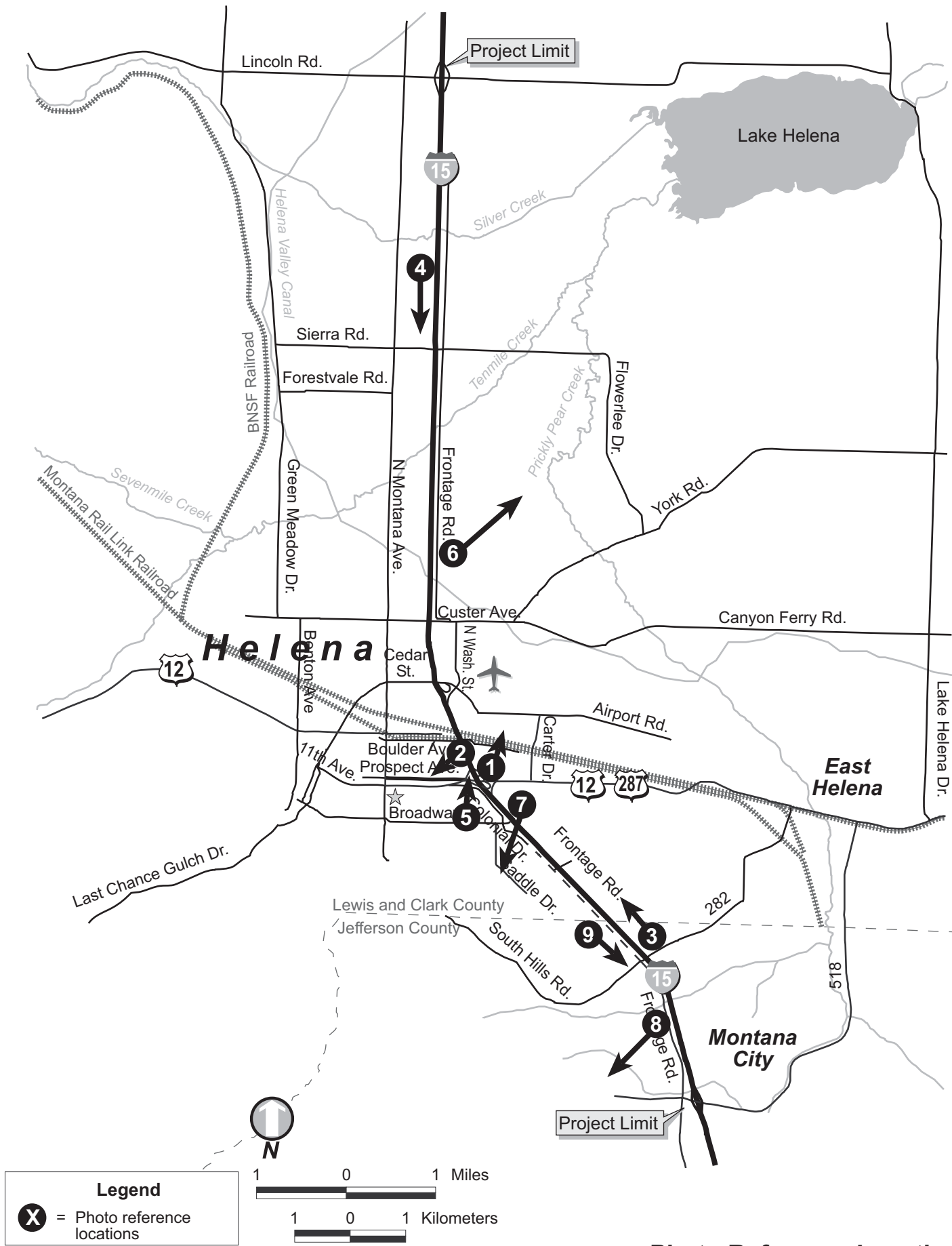


Photo Reference Locations

Figure 3-28

3.19.1 Character

Commercial/Industrial/ Institutional/Business:

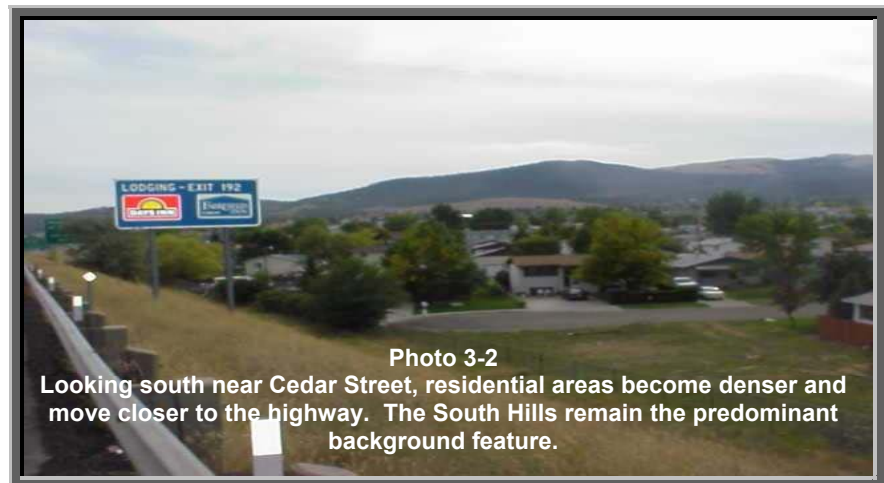
Commercial land uses along I-15 between Broadway and Custer Avenue all contain elements common to a commercial/industrial landscape character. This type of development is adjacent to the I-15 right-of-way and cross streets. Future similar development would be expected along I-15.



These elements include signs, utilities, lighting, parking lots, and a larger percentage of vehicles. Areas with landscaping often enhance the visual character, provide screening, and help to diminish the cluttered appearance. The I-15 study area has typical road elements, such as signing, guardrail and right-of-way fencing.

Residential/Urban: Urban-character neighborhoods border the west side of I-15 between US 12 and the railroad, then north of the railroad to Cedar Street.

Neighborhoods west of I-15 along Broadway and surrounding areas are typical of this category. Higher density residential development is located around the Capitol interchange and west around the state capitol, and is combined with hotels, retail and commercial development.



Residential/Suburban

and Rural: Suburban and rural neighborhoods are identified along I-15 north and south of Custer Avenue and south of Broadway. Most homes are situated on larger lots and are a lower density per acre.



Photo 3-3
Looking northwest, just north of Road 282 at rural undeveloped open land.

Natural Open Space/ Undeveloped Property: Many open areas are used for agriculture or are associated with a natural drainage or open space. Native vegetation along drainages creates areas of scenic interest. Views to water resources within the study area are to the Tenmile Creek drainage, Prickly Pear Creek, and Lake Helena in the background.

3.19.2 Viewsheds

The four visual character units were inventoried for existing foreground, middleground, and background views to and from the I-15 Corridor and distinctive (scenic) views outside the corridor.

Foreground landscape units are those immediately visible and define the local character of the area. The foreground is defined as the area within 0-0.8 km (0-0.5 mile) of the viewer. The middleground is defined as views within 0.8 km to 6.4 km (0.5 mile to 4 miles). The background views are 6.4 km (4 miles) or greater.

Foreground views from the I-15 Corridor are of the land uses immediately adjacent to I-15, which include all the previously described visual



Photo 3-4
A typical view of the I-15 Corridor with typical highway conditions in the foreground, mostly open views in the middleground and distant views to the Helena National Forest in the background.

characteristics. The study area can be viewed in the foreground from adjacent development and for longer distances from the undeveloped properties. The Frontage Road on the east side of I-15 becomes a prominent foreground feature north of Custer Avenue.

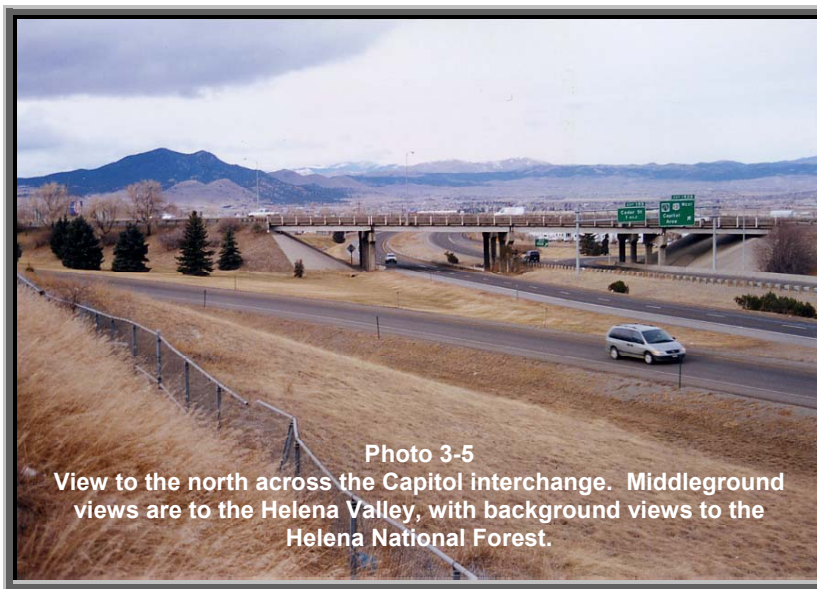


Photo 3-5
View to the north across the Capitol interchange. Middleground views are to the Helena Valley, with background views to the Helena National Forest.

Middleground views from within the I-15 Corridor are mostly unrestricted. The surrounding topography is the primary limiting factor interrupting long distance views. The I-15 Corridor can also be viewed from many vantage points outside the study area depending on the viewing elevation. Background views from the I-15 Corridor, are mostly unrestricted and include views to the

Helena National Forest Mountains and the Helena Valley. Wide-open views are prevalent up and down the study area.



Photo 3-6
The Frontage Road on the east side of I-15 adjacent to the highway north of Custer Avenue with residential adjacent to the Frontage Road. Mountains are visible in the background.

The topography of the interstate increases in elevation north of Custer Avenue and the view down into the valley becomes wide-open and mostly undeveloped. The viewshed for the remaining portion of the study area is comprised of large tracts of agricultural land with farms.

South of Lincoln Road, the landscape is primarily agricultural land use interspersed with medium density residential development.



Photo 3-7
The land south of Broadway is mostly undeveloped open land with sporadic residential development.



Photo 3-8
Near the Montana City interchange, there is a Frontage Road on the west adjacent to the roadway. This Frontage Road is proposed to be improved connecting to Colonial Drive as one of the supporting elements common to both build alternatives. A majority of the surrounding land is undeveloped with a sporadic low-density residential.



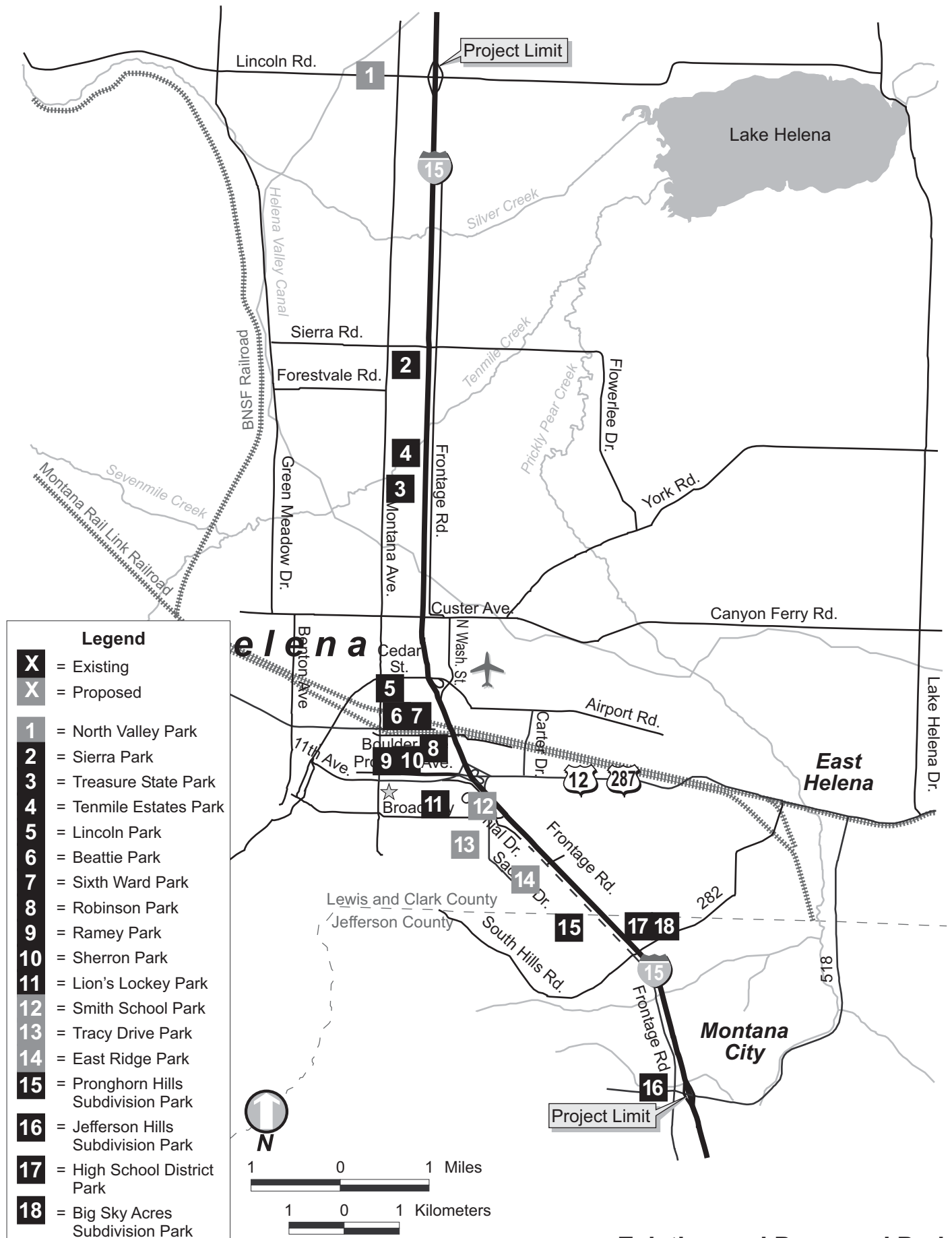
3.20 Parks and Recreation Resources

The study area offers numerous parks and recreation opportunities due to the fact that topography varies so widely throughout the area. The terrain is relatively flat throughout the valley floor but becomes more steep and rugged in the surrounding hills and mountains. Seasonal weather variations also contribute to the plentiful recreation opportunities.

There are a total of 14 existing parks in the study area; 10 are in Lewis & Clark County and Helena and four are in Jefferson County. Four additional parks are planned within the Lewis & Clark County portion of the study area.

In Lewis & Clark County there is a total of 104 hectares (257 acres) of parkland. There is a total of 445 hectares (1,100 acres) of parkland in Helena of which 78% is associated with Mount Helena City Park and the Bill Roberts Golf Course. East Helena's park system consists of over 4 hectares (10 acres) of neighborhood and community parks. Recreational amenities outside the city limits include downhill and cross-country skiing, hiking and fishing in Jefferson and Lewis & Clark Counties.

In Lewis & Clark County (including Helena) there are 10 existing parks within 0.8 kilometer (0.5 mile) of the I-15 Corridor (see **Figure 3-29**). These resources are:



- ▶ Sierra Park at I-15 and Sierra Road is just south of Rossiter Elementary School. The site contains two ballfields, a multi-use play field, two volleyball courts, an open play area, picnic area, horseshoe pits and an unpaved parking lot.
- ▶ Treasure State Park in the Treasure State Acres subdivision is east of N. Montana Avenue halfway between Custer Avenue and Sierra Road. It is a neighborhood park owned by Lewis & Clark County. The 3-hectare (8 acre) park is well maintained and includes the following facilities: playground area, open play area, and some minor landscaping.
- ▶ Tenmile Estates Park is located at N. Montana Avenue and Valley Forge Road. It is a neighborhood park owned and maintained by the Homeowners Association.
- ▶ Lincoln Park is located two blocks south of Cedar Street and 1 block east of N. Montana Avenue. It contains 2 hectares (5 acres) of land. The site is well developed and contains the following facilities: tennis courts, youth softball field, playground equipment, picnic shelter, picnic area, restrooms, ice skating rink, basketball court, horseshoe pits, open grass area, parking, and site amenities.
- ▶ Beattie Park is a couple of blocks north of the railroad tracks between N. Montana Avenue and I-15. Existing facilities include a picnic area with shelter, antique railroad display, and site amenities.
- ▶ Sixth Ward Park is located east of N. Montana Avenue and north of the railroad tracks. The park consists of 0.22 hectare (0.55 acre) of land. The park includes the following existing facilities: playground area, picnic area, wading pool, and open grass area.
- ▶ Robinson Park is located north of Prospect Avenue between N. Montana Avenue and I-15. The park contains 1 hectare (3 acres) of land. The site is only minimally developed with the following facilities: a picnic shelter and open area, open grass area and some site amenities.
- ▶ Ramey Park is located adjacent to Helena High School, a few blocks from Robinson Park. The site contains 2 hectares (5 acres) of land and is one of the newer parks in the city. It is in good condition and has the following facilities: youth and adult fastpitch softball fields, basketball court, playground area, parking area, picnic area, and site amenities.
- ▶ Sherron Park is located adjacent to Helena High School east of Ramey Park. The park consists of 0.9 hectare (2.2 acres) of land, is well designed and includes the following facilities: wading pool, basketball court, playground area, picnic area, open grass area, pathway, and site amenities.
- ▶ Lion's Lockey Park is located east of the state capitol buildings on Broadway. The site contains 1.6 hectares (4 acres) of land with the following existing facilities: tennis courts, youth softball field, ice skating rink, playground equipment, basketball court, picnic shelter and area, open grass area, and site amenities.

In addition to these city and county parks, it is likely that people use I-15 to access large urban area recreation destinations such as Bill Roberts Golf Course and the adjoining Batch Field, the Lewis & Clark County Fairgrounds, Spring Meadow Lake State Park, and Mount Helena City Park all to the west and southwest of Helena. I-15 is also a major route to access regional recreation opportunities at Lake Helena, Canyon Ferry Dam, the Helena Regulating Reservoir along the Missouri River, and the Gates of the Mountains Wilderness Area in the Helena National Forest.

The *Comprehensive Parks, Recreation and Open Space Plan* for the city of Helena also identified the demand for recreation areas and facilities as a result of public workshops held and a 1997 household survey. Trails linking schools and parks were most needed. Also the need for acquisition of open space in the South Hills area just southwest of the city was specified. This open space would be used to preserve the setting and backdrop of the community and provide a place for trail development. I-15 would be a major route serving this destination.

The Plan proposes four additional parks in Lewis & Clark County as shown in **Figure 3-29**. These proposed resources are:

- ▶ North Valley Park on Lincoln Road west of I-15 near the Jim Darcy Elementary School. This area does not have any type of park or recreational facilities. Because population is currently low in the area, but is an area identified for future growth and development, the plan recommends that the site should be acquired now and developed later. The plan recommends that the park should be adjacent to the school to encourage joint use of facilities. Suggested facilities include baseball and soccer fields, tennis courts, restrooms, picnic areas with shelters, trails/pathways systems, basketball court, children's playground, irrigation system, trees and landscaping.
- ▶ Smith School Park on Broadway near Colonial Drive. The Parks plan recommends this park be developed on the school grounds but be open to the general public. Proposed plans include upgrading the children's playground and a multi-use ballfield/soccer field and developing a paved pathway system, a basketball court and other site amenities.
- ▶ Tracy Drive Park is located off Saddle Drive near the proposed South Helena interchange. There is no park in this portion of the city. The site contains 0.8 hectare (2 acres) of land and is basically undeveloped. The only facility at the site is a children's playground area. Proposed facilities include: a basketball court, picnic area with shelter, paved pathway system, trees and landscaping, site amenities, and irrigation.
- ▶ East Ridge Park located southeast of the proposed Tracy Drive Park. The proposed location is outside the current city limits. No land has been identified; however, the Plan recommends that 10 to 14 hectares (25 to 35 acres) be acquired to

develop a community park. The location would make a convenient trailhead for the South Hills trails system. Suggested facilities include: youth baseball/softball fields, soccer field, tennis courts, basketball court, children's playground, picnic area with shelter, paved pathway system, restrooms, parking area, and trees and landscaping.

Within the study area, as described above, there are no open space areas. Existing open space areas are located outside the study area west of I-15 around Mount Helena City Park, Tenmile Creek, and Nature Park. East of I-15, there is open space along Prickly Pear Creek. The city recently acquired approximately 261 hectares (645 acres) of open space in the South Hills area and around Mount Helena City Park.

Most of the parks in Northern Jefferson County are undeveloped land created to meet criteria for subdivision approval. In the portion of the study area that falls within Jefferson County there are four existing parks; one developed and three undeveloped.

- ▶ Jefferson Hills Subdivision has one developed park located just west of I-15/Montana City interchange. It is directly west of the Montana City Store and consists of baseball and soccer fields and an open grass area.
- ▶ The Pronghorn Hills Subdivision on the west side of I-15 at the county line contains one unimproved park.
- ▶ Big Ski Acres Subdivision on the east side of I-15 at the county line includes an unimproved park.
- ▶ High School District Park located on the east side of I-15 at the county line is an unimproved park.

The Montana City interchange is used to access other parks outside of the study area, which include a park in the Beacon Hills subdivision, a park in the Saddle Mountain area and the Elkhorn Mountains southeast of Montana City in Helena National Forest. There are no proposed parks in this portion of the study area at this time. However, with future development, parks could be included.

CHAPTER 4.0: TRANSPORTATION IMPACTS

4.1 Introduction

This chapter describes direct and indirect transportation impacts that would occur as a result of implementation of alternatives assessed in the DEIS, with Alternative 1 identified as the Preferred Alternative along I-15 between the Montana City and Lincoln Road interchanges. Direct impacts are those that would result immediately from the implementation of a build alternative. Indirect impacts are those that are project-induced but occur later in time or are farther removed in distance from the primary corridor. The impacts are presented as a comparative analysis between the No-Action Alternative, the Preferred Alternative and Alternative 2.

Transportation impacts have been assessed for I-15 mainline segments, existing and new interchange locations and the surrounding roadway system. In addition, impacts related to vehicle miles of travel (VMT), vehicle hours of travel (VHT), interchange/intersection operations, emergency response access, roadway connectivity, traffic safety, pedestrian and bicycle facilities, freight/truck movement, and access to community resources also were evaluated. The documentation of transportation impacts is based on a year 2025 planning horizon and utilizes the Helena Urban Travel Demand Forecast Model developed by MDT.

4.2 Compatibility with Transportation Plans and Programmed Projects

There are several plans that are relevant to future transportation needs and programmed projects. These include the *2003 to 2005 Statewide Transportation Improvement Program (STIP)*; *1993 Helena Area Transportation Plan*; *The Greater Helena Area 2001 Transportation Development Plan (TDP) Update*; *Lewis & Clark County Special Zoning Districts*; *2000 Report on Infrastructure in Helena's Developing East Side*; *Lewis & Clark County Comprehensive Draft Plan, 2000*; *City of Helena Growth Policy Plan, 2001*; *1993 Jefferson County Comprehensive Plan*, the *Airport Capital Improvement Plan, FY 2002-FY 2006*, the *Comprehensive Parks, Recreation and Open Space Plan, 1998*; and the *Draft Non-Motorized Transportation Plan, March 17, 2003*).

4.2.1 No-Action Alternative

According to area plans there are three programmed or funded transportation projects by MDT, the city of Helena, Jefferson County or Lewis & Clark County within the I-15 Corridor study area that address the project's purpose and need. These three projects, all of which are included in the STIP, are reconstruction of the Lincoln

Road interchange, ramp revisions at the Capitol interchange, and a new pedestrian tunnel at I-15. However, none of these projects would substantially improve the traffic-carrying capacity or access in the corridor. In addition, there are recommended improvements within the study area, including the Reasonably Foreseeable projects identified in **Table 5-7**. Recommended improvements from the *1993 Helena Area Transportation Plan* include the Custer Avenue interchange, Capitol interchange improvements, and improvements to 11th Street from Fee to California. This plan assumed the construction of a North Valley (Forestvale) interchange. The No-Action Alternative does not accommodate the designated future growth areas north and south of the Capitol interchange (identified in the *2000 Lewis & Clark County Comprehensive Draft Plan* and *2001 City of Helena Growth Policy Plan*), as it does not provide new transportation infrastructure in these areas.

Recommended improvements from *Volume III of the Comprehensive Parks, Recreation and Open Space Plan for Lewis & Clark County* include the following off-street trails which would access the I-15 corridor: Silver Creek Trail, Tenmile Creek Trail, Prickly Pear Creek Trail, and Holmes Gulch Trail. Recommended improvements from the *Comprehensive Parks, Recreation and Open Space Plan, Volume II, City of Helena*, include on-street bike lanes at Lincoln Road, Boulder Avenue, Montana City, and Custer Avenue. Other improvements outside the study area but of interest include turn lane improvements on N. Montana Avenue and the reconstruction of N. Main to five lanes.

Other than the three projects included in the STIP, the No-Action Alternative fails to provide any of the important transportation improvements recommended in the local and regional plans mentioned above. In addition, the recommended transportation improvements identified in **Table 5-7** do not in themselves or in combination meet the goals established for this project's purpose and need.

4.2.2 Preferred Alternative

The Preferred Alternative is compatible with recommendations from the *1993 Helena Area Transportation Plan* that include the Custer interchange, Capitol interchange improvements, and improvements recommended for 11th Street from Fee to California. This alternative is also compatible with the 2003-2005 STIP, which identifies the Lincoln Road interchange improvements, ramp revisions at Capitol interchange and a new pedestrian tunnel at the I-15/Capitol interchange. The proposed Custer interchange is identified in *Helena's Growth Policy Plan* in a designated Urban Area with development anticipated in the near term. The commercial development that may occur in this area includes retail businesses, offices and service-related businesses. This type of development is generally consistent with the current zoning and land use character near Custer Avenue and I-15.

The Preferred Alternative also accommodates the designated future growth area south of the Capitol interchange identified as an Urban Area in the *2000 Lewis & Clark County Comprehensive Draft Plan* and *2001 City of Helena Growth Policy Plan*. New transportation infrastructure would be provided in this area via the South Helena interchange, the west side Frontage Road extension and improvements to pedestrian/bicycle access across I-15. The type of development expected in this area includes commercial, residential, and supportive development. These are consistent with current land use and zoning. It is expected that supportive development (gas station, hotels, etc.) would likely occur in the near term and adjacent commercial and residential development later in time upon approval of the appropriate jurisdiction.

Providing pedestrian and bicycle access across I-15 at the Montana City interchange, the South Helena interchange, the Broadway Underpass, the Capitol interchange, Cedar Street, Custer Avenue, and Lincoln Road complies with all plans by adding and improving the facilities available to pedestrians and bicyclists.

Each of the supporting elements included in the Preferred Alternative is also compatible with existing local and regional plans:

- ▶ Lincoln Road interchange improvements comply with all plans by improving the safety and efficiency of the existing transportation infrastructure, and the provision of improved pedestrian and bicycle facilities, and is included in the 2003-2005 STIP.
- ▶ Montana City interchange improvements support the *1993 Jefferson County Comprehensive Plan* by serving the residential development zoned for northern Jefferson County, and the provision of improved pedestrian and bicycle facilities.
- ▶ Connecting and paving the I-15 west side Frontage Road between Colonial Drive and Road 282/South Hills Road complies with all plans, including Jefferson County's, by providing new infrastructure in an area designated for growth. The Frontage Road would be located in the area that the *City of Helena Growth Policy Plan*, the *Lewis & Clark County Comprehensive Draft Plan* and the *East Side Infrastructure Report* all identify as a preferred area for future growth.
- ▶ Providing five lanes on Cedar Street between I-15 and N. Montana Avenue complies with all plans by improving the efficiency of the existing transportation infrastructure.
- ▶ Constructing an underpass of I-15 at Broadway for pedestrian and bicycle use complies with all plans by adding and improving the facilities available to pedestrians and bicyclists.

4.2.3 Alternative 2

Alternative 2 is similar in compatibility with local plans and varies from the Preferred Alternative as noted below.

Alternative 2 is compatible with recommendations from the *1993 Helena Area Transportation Plan* that includes Capitol interchange improvements and improvements recommended for 11th Street from Fee to California. The interchange at Forestvale complies with all transportation plans by providing new infrastructure in a designated Transition Area. However, Transition Areas are currently not expected to receive other basic infrastructure improvements such as sewer and water within the 20-year planning horizon for the city of Helena (*2000 Lewis & Clark County Comprehensive Draft Plan*). Currently, the area near Forestvale is not zoned; however, it is likely that commercial, residential, and supportive development could occur in the area. Any development would require approval from the appropriate jurisdiction.

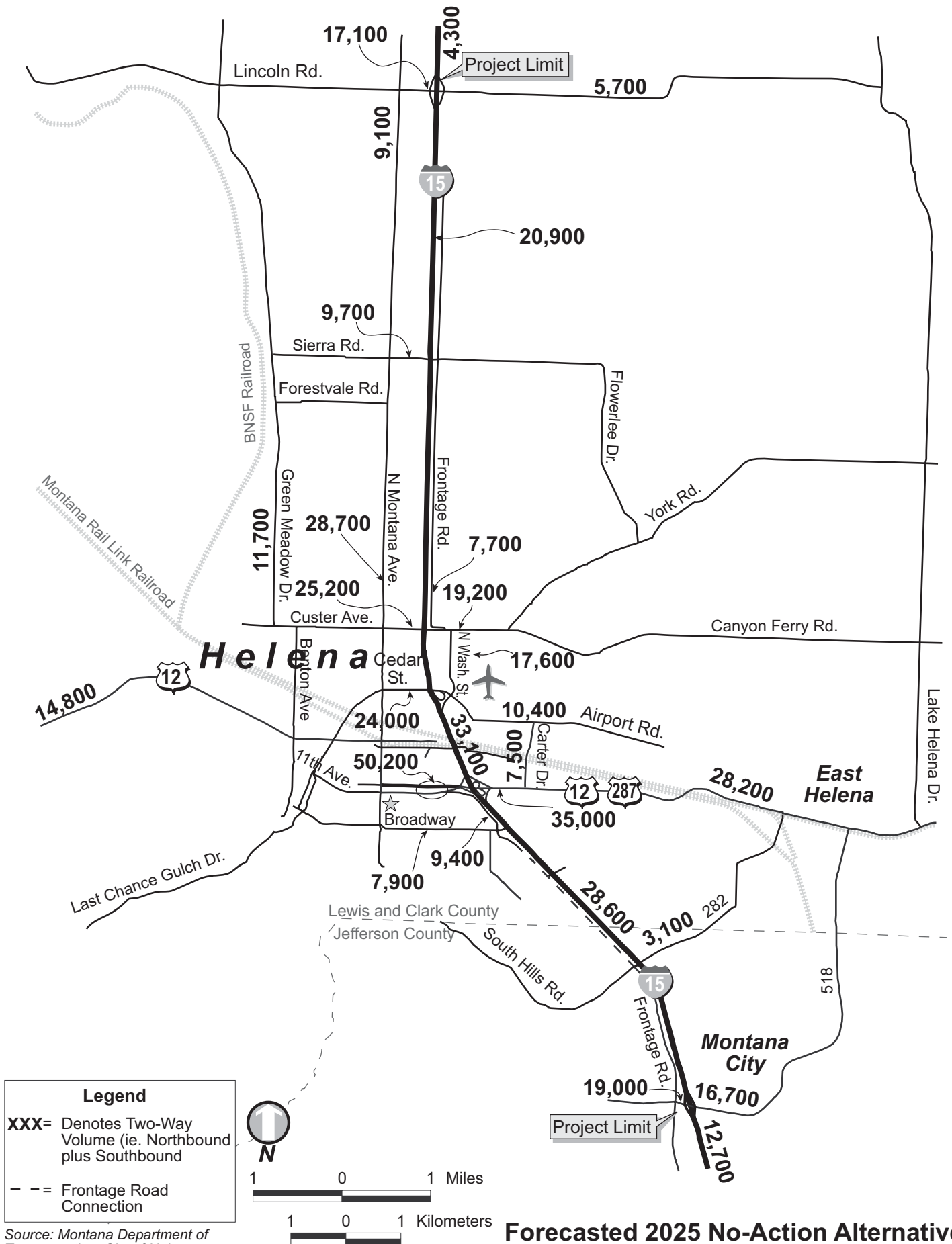
4.3 Roadway Operations and Impacts

4.3.1 Regional/Corridor Traffic Characteristics

Year 2025 traffic volumes were forecast for the No-Action Alternative and the build alternatives using a TransCAD travel model developed by MDT. This is referred to as the Helena Urban Travel Demand Forecast Model (the Model). Travel demand forecast models are used in long-range planning to estimate future traffic characteristics. Since these models are based on forecasted land use and existing travel patterns, the resulting traffic volumes are not expected to be completely accurate but assist in the assessment of anticipated future conditions. However, these models are fairly precise when comparing transportation alternatives. Since the assumptions in the model are the same except for alternative specific transportation improvements, even small differences can be considered valid for comparative purposes. The Model results presented in this document are therefore less precise when absolute changes or numbers are forecast and more precise when differences between alternatives are presented.

The 2025 average weekday traffic volumes for the No-Action Alternative are shown in **Figure 4-1**. This figure shows two-way daily volumes assuming no improvements to the highway network.

As described in the land use section (Section 3.2.2.3), two different land use forecasts were developed assuming different interchange locations; specifically a new northern interchange and a new southern interchange. A third land use forecast was developed



assuming balanced growth without the effect of new interchanges, thus becoming the No-Action land use scenario. The land use forecasts assumed that the growth was distributed more to the north for the northern interchange scenario and more to the south for the southern interchange scenario. These land use forecasts were used to study the effect of new individual interchanges on future induced growth. For the build alternatives where both new northern and southern interchanges are included, the balanced growth land use forecast was assumed. The No-Action Alternative also uses the balanced growth land use forecast.

The traffic forecasts for the build alternatives show the importance of the Capitol interchange in the I-15 Corridor, showing a substantial increase in utilization of the Capitol interchange. The traffic forecasts also show continuing growth in use of the Lincoln Road and Montana City interchanges at either end of the corridor. The local roadway system that is just outside the I-15 Corridor will see some shifts in 2025 traffic patterns compared to the No-Action Alternative.

Another consideration is the well-known connection between transportation and land use. When traffic volumes increase as a result of transportation improvements it is often attributed to "induced demand." However, it is important to note that the extent of highway travel in an area is a function of many variables including population, economics, land use, fuel prices, and availability of alternate modes of travel, such as transit. Induced demand may be defined in two ways. First, induced demand may simply be defined as those transportation system users (for example, automobile drivers) enabled to use the system (such as a highway) once it is improved, because the transportation system is more accessible and desirable. The users always had a demand (latent demand) for transportation, but they now are able to exercise that wish. Induced demand also may be defined as an increase in the number of trips as a result of the improvements. There may be increased vehicle trips made due to availability of improved facilities. Over time, the benefits of the facilities may be lost due to increased traffic resulting in a congested facility. It is also recognized that "demand suppression" may result if transportation system improvements do not take place. Demand suppression occurs when a transportation system user (typically a driver) wants to go somewhere, but the transportation system is too inconvenient or inadequate, and the driver chooses not to make a trip. Hence, the demand has been suppressed. New improvements do not bring upon newly created demand, these improvements enable suppressed demand to be satisfied. The improvements simply facilitate travel to take place, because the need/demand already exists. Induced or suppressed demand would be impossible to calculate or predict given the numerous factors involved including many human decision factors.

The project is not intended to induce growth, but this study recognizes that growth, at least in certain areas, might be a likely consequence. As described in Section 3.2.2.3 different land use forecasts were developed to consider the relationship of

land use with new transportation improvements. Although there is no clear formula for determining the effect of transportation improvements on land use, the process used for this project provides a general consensus of the type and location of land use that might occur with or without a build alternative. Since this input has been incorporated into the travel demand model, the forecasts presented in this EIS can be used for comparative analysis. Future land use maps and zoning prepared by cities and counties can provide an indicator of what type of development is acceptable in a certain area. However, the actual location and timing of future development is impossible to accurately predict.

4.3.2 I-15 Volumes and Surrounding Roadway System

The influence of the build alternatives on the surrounding roadway system was examined in comparison to the 2025 No-Action Alternative. The Helena Urban Travel Demand Forecast Model was used to test the sensitivity of trip distribution and travel patterns related to each alternative. **Figure 4-2** provides year 2025 traffic forecasts for the I-15 mainline for the No-Action Alternative, the Preferred Alternative and Alternative 2. **Figure 4-3** presents 2025 traffic forecasts for the I-15 Corridor in terms of average daily traffic volumes on major links. **Figure 4-4** and **Figure 4-5** highlight the percent change in daily traffic volumes that result from the alternatives, including the surrounding roadway network approximately 0.8 kilometer (0.5 mile) to either side of I-15. Changes in traffic volumes on surrounding roadways are influenced by both new connectivity and new roadway crossings associated with I-15 while some routes may receive additional traffic in the future, due to added convenience and reduced congestion.

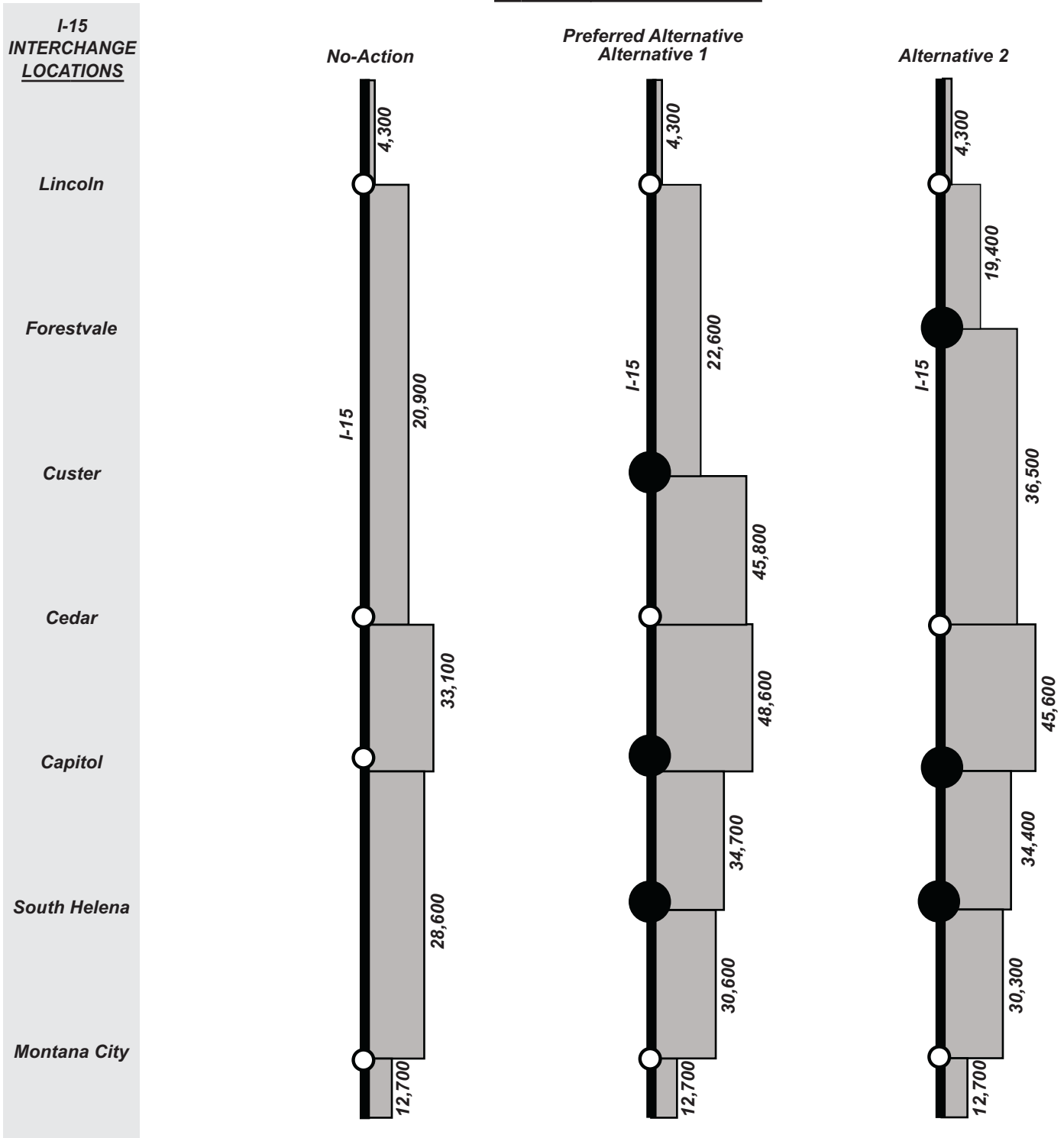
4.3.2.1 No-Action Alternative

For the No-Action Alternative, I-15 and the surrounding roadway system traffic volumes would continue to increase, even though the transportation infrastructure would not be substantially improved except by the spot safety improvement projects identified in the STIP and **Table 5-7**. The resulting level of service is described in Section 4.4.

4.3.2.2 Preferred Alternative

With the Preferred Alternative, changes to I-15 traffic volumes are based on the combined influence from new interchanges at Custer and South Helena, plus improvements to the Capitol interchange. Daily traffic on I-15 between Custer Avenue and Cedar Street more than doubles compared to the No-Action Alternative. Volumes between Cedar Street and the Capitol interchange increase by approximately 45%. The Preferred Alternative results in minor increases in traffic activity on I-15 north of Custer Avenue and south of the South Helena interchange when compared to the No-Action Alternative.

ALTERNATIVE SCENARIOS



Legend

2-Way Daily Volume in Thousands

= 10,000
 = 20,000

○ = Existing I-15 Access

● = Alternative I-15 Access or Interchange Improvement

Source: MDT, Helena Urban Travel Demand Forecast Model

INTERSTATE 15 CORRIDOR

Montana City to Lincoln Road

Carter-Burgess

**Average 2025 Weekday 2-Way
Traffic Volumes on I-15**

Figure 4-2

| I-15 INTERCHANGE LOCATIONS | No-Action | | Preferred Alternative Alternative 1 | | Alternative 2 | |
|----------------------------------|-----------------|-----------------------|--|-----------------------|------------------|-----------------------|
| | TOTAL 24,300 | 4,300 | TOTAL 24,400 | 4,300 | TOTAL 20,000 | 4,300 |
| Lincoln | 21,200 | 8,300 | 20,500 | 8,500 | 17,600 | 6,200 |
| | | South Ramps 17,800 | | South Ramps 19,100 | | South Ramps 15,600 |
| | 20,900 | | 22,600 | | 19,400 | |
| Sierra | 9,700 | | 10,700 | | 7,400 | |
| | 20,900 | | 22,600 | | 19,400 | |
| Forestvale | | I-15 | | I-15 | TOTAL 25,700 | North Ramps 3,400 |
| | | | | | 14,200 | South Ramps 20,500 |
| | 20,900 | | 22,600 | | 36,500 | I-15 |
| Custer | 25,300 | 25,300 | 30,300 | 26,300 | 23,900 | 23,900 |
| | | | | South Ramps 26,900 | | |
| | 20,900 | | 45,800 | | 36,500 | |
| Cedar | TOTAL 38,500 | North Ramps 7,000 | TOTAL 31,100 | North Ramps 8,000 | TOTAL 35,400 | North Ramps 9,000 |
| | 22,700 | 9,200 | 22,900 | 7,800 | 22,900 | 7,500 |
| | | South Ramps 19,300 | | South Ramps 11,300 | | South Ramps 18,000 |
| | 33,100 | | 48,600 | | 45,600 | |
| Capitol | TOTAL 66,900 | North Ramps 23,300 | TOTAL 77,400* | North Ramps 34,300 | TOTAL 77,300* | North Ramps 32,300 |
| | 52,600 | 39,000 | 43,600 | 37,700 | 45,000 | 37,600 |
| | | South Ramps 18,800 | | South Ramps 20,400 | | South Ramps 21,100 |
| | 28,600 | | 34,700 | | 34,400 | |
| South Helena | | | TOTAL 16,200 | North Ramps 9,500 | TOTAL 16,200 | North Ramps 9,400 |
| | | | 8,700 | 8,800 | 8,600 | 9,100 |
| | | | | South Ramps 5,300 | | South Ramps 5,200 |
| | 28,600 | | 30,600 | | 30,300 | |
| Montana City | TOTAL 29,900 | North Ramps 20,000 | TOTAL 29,400 | North Ramps 21,400 | TOTAL 29,300 | North Ramps 21,100 |
| | 18,800 | 16,700 | 17,900 | 15,900 | 18,100 | 15,800 |
| | | South Ramps 4,200 | | South Ramps 3,500 | | South Ramps 3,600 |
| | 12,700 | | 12,700 | | 12,700 | |

Legend

X,XXX = Total Daily Volume

X,XXX = Total Traffic Entering Interchange

X,XXX = Total Traffic on Ramps

* Capitol Interchange volumes include Colonial Drive connection, which is not shown, which adds about 9,000 entering vehicles to the interchange total.

Source: MDT, Helena Urban Travel Demand Forecast Model

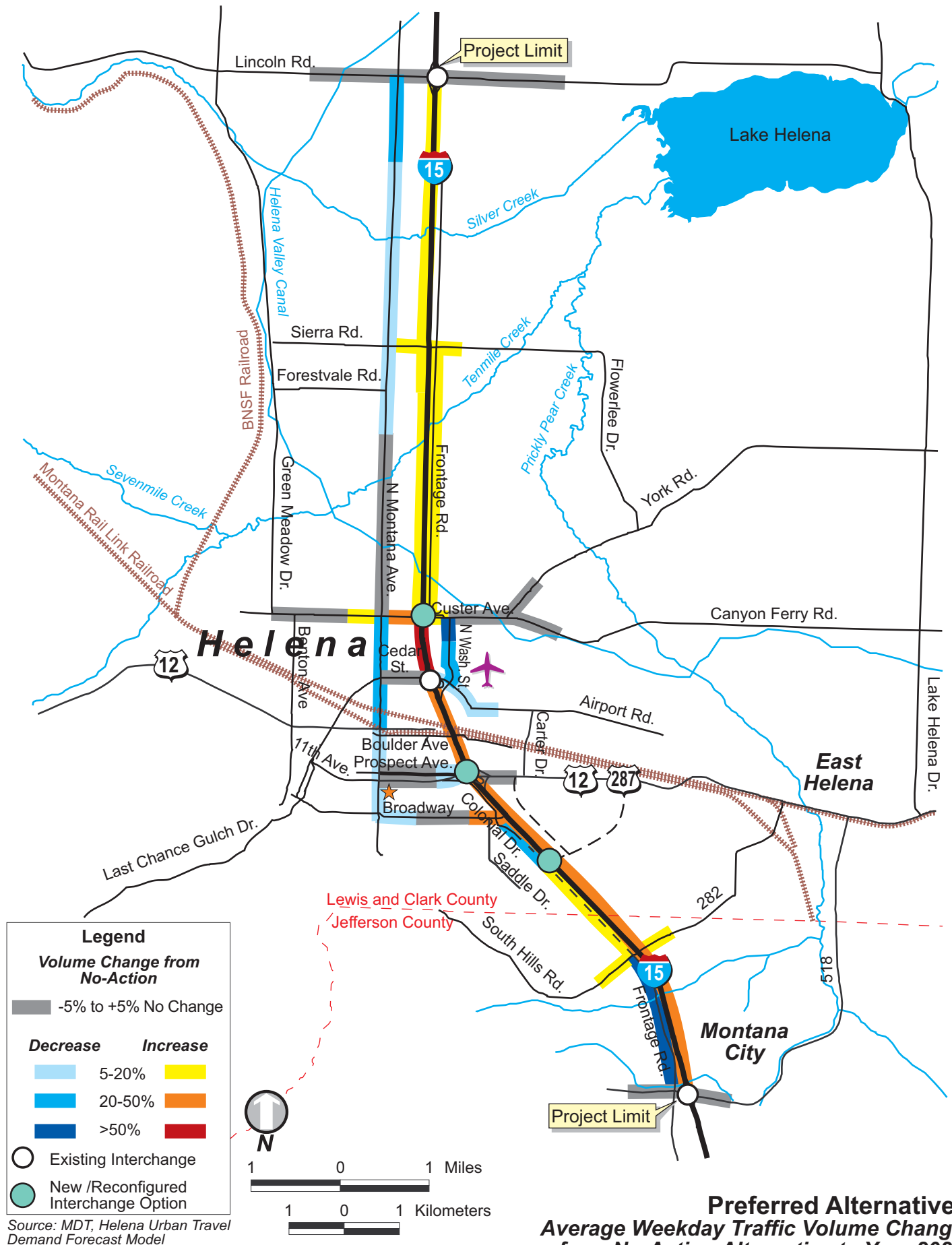
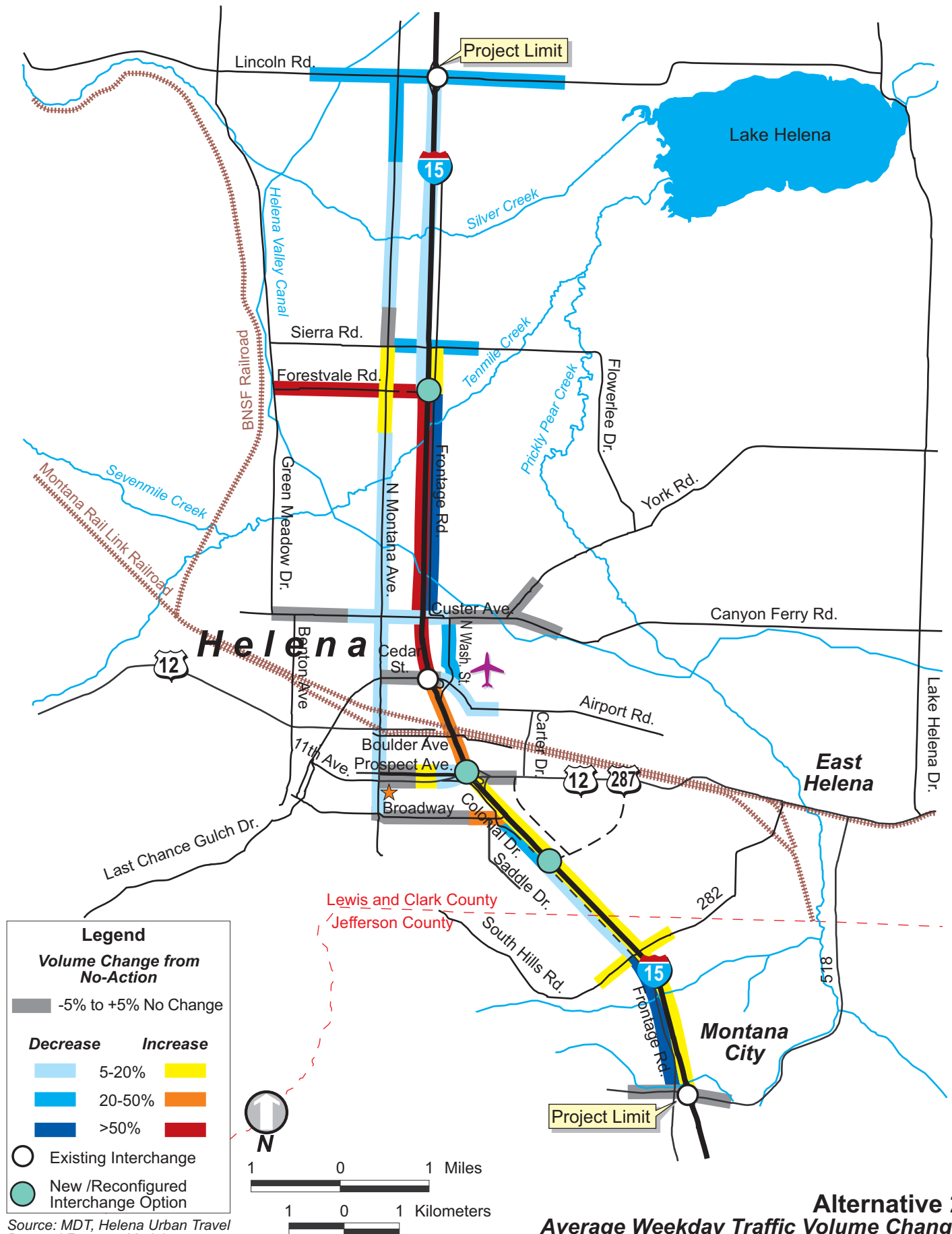


Figure 4-4



Alternative 2
Average Weekday Traffic Volume Change
from No-Action Alternative to Year 2025

Figure 4-5

As shown in **Figure 4-4**, Custer Avenue is projected to realize an increase in traffic activity between the east side Frontage Road and the roadway segment directly west of N. Montana Avenue. It should be noted that on the segment of Custer Avenue west of N. Montana Avenue it may not be feasible to substantially increase capacity (such as widening from two to four lanes), even though the forecasts show an increase in traffic compared to the No-Action Alternative. The remaining segments of Custer Avenue, further removed from I-15, are not estimated to experience a notable change in travel volumes. This is reasonable since most trips on these further removed sections of Custer Avenue were likely to use Custer Avenue regardless of whether there was an interchange at Custer Avenue and I-15. Other roadways that display increases in traffic activity with the Preferred Alternative include Sierra Road, the east side Frontage Road between Custer Avenue and Sierra Road, Broadway west of Colonial Drive, and Road 282/South Hills Road. New roadways connecting the South Helena interchange to US 12 east of I-15 would also provide key access for interchange users and trips across I-15. In 2025 these roadways combined are projected to accommodate daily travel demand ranging from 7,500 to 10,000 total trips.

Improvements related to the Preferred Alternative are projected to result in a decrease in traffic volumes along several surrounding roadway segments. In the north, a Custer interchange reduces volumes along most segments of N. Montana Avenue between Lincoln Road and Broadway. In addition, traffic is reduced on North Washington Street between Custer Avenue and Cedar Street, and along Cedar Street east of I-15. A South Helena interchange is estimated to reduce travel demand on the west side Frontage Road between Road 282/South Hills Road and Montana City. This correlates to the increased use of I-15. Improvements to the Capitol interchange under this alternative influence a moderate decrease in traffic activity on Prospect/11th Avenue between the Capitol interchange and Fee Street, plus some reduction in traffic along segments of Broadway.

4.3.2.3 Alternative 2

With Alternative 2, changes to I-15 traffic are based on the combined influence from new interchanges at Forestvale Road and South Helena, plus improvements to the Capitol interchange. These changes are projected to increase traffic volumes on I-15 between Forestvale Road and Cedar Street by approximately 75% over the No-Action Alternative. Traffic activity between Cedar Street and the Capitol interchange increases by approximately 40%, and increases approximately 20% between the Capitol interchange and the South Helena interchange. This alternative results in minor changes in traffic activity on I-15 north of Forestvale Road and south of the South Helena interchange.

As shown in **Figure 4-5** surrounding roads that are projected to realize an increase in travel volumes include Forestvale Road, the east side Frontage Road north of

Forestvale Road, and a segment of N. Montana Avenue south of Sierra Road. Improvements included in Alternative 2 are also projected to increase volumes moderately on South Hills Road/Road 282 and along isolated segments of Prospect/11th Avenue and Broadway. New roadways connecting the South Helena interchange to US 12 east of I-15 would also provide key access for interchange users and trips across I-15. In 2025 these roadways combined are estimated to accommodate daily travel demand ranging from 7,500 to 10,000 total trips.

In comparison to the No-Action Alternative, volume reductions are noted for several roadways under Alternative 2. Most segments of N. Montana Avenue between Lincoln Road and Broadway are projected to realize minor decreases in traffic. In addition, the east side Frontage Road between Forestvale Road and Custer Avenue displays a volume reduction due to the redistribution of travel demand to I-15. Also in the north, both Lincoln Road and Sierra Road reflect a moderate volume decrease on each side of I-15. In the south, a South Helena interchange is estimated to reduce travel demand on all segments of the west side Frontage Road between Colonial Drive and Montana City. This correlates to the increased use of I-15. Improvements to the Capitol interchange under this alternative influence a moderate decrease in traffic activity on Prospect/11th Avenue between the Capitol interchange and Fee Street.

4.3.3 Interchange Utilization

Interchange traffic activity is affected by connecting roadways, opportunities for access and egress to and from I-15 and future land use. The Helena Urban Travel Demand Forecast Model provided year 2025 interchange use for each of the existing and proposed interchanges on I-15 for the No-Action Alternative, the Preferred Alternative and Alternative 2. This information is presented in **Figure 4-6**, in terms of daily traffic volumes entering each interchange. Key observations on changes in interchange use for the No-Action and the build alternatives are described below.

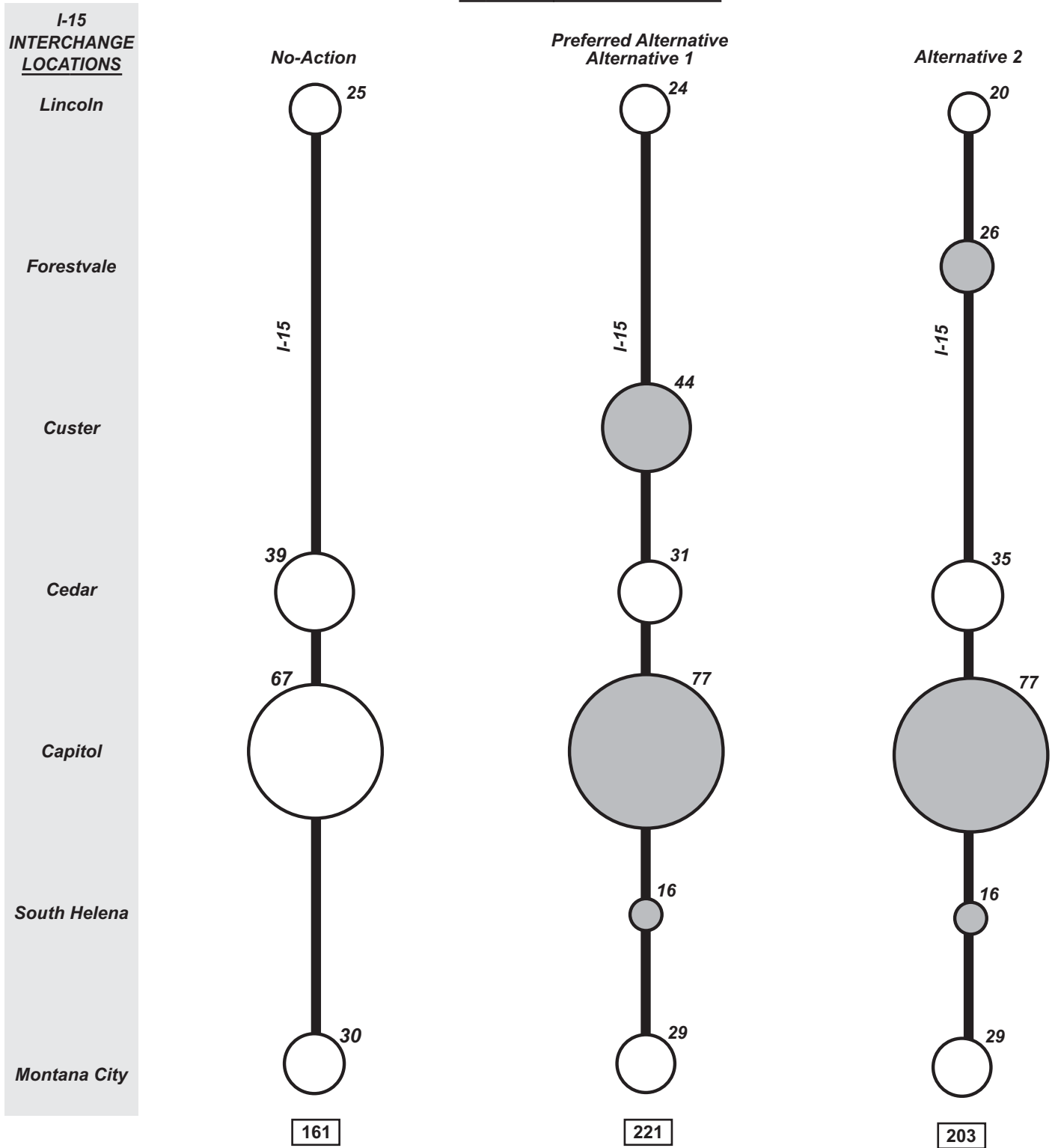
4.3.3.1 No-Action Alternative

For the No-Action Alternative, the use at all interchanges in the study area would continue to increase, even though the transportation infrastructure would not be substantially improved other than those improvements listed in the STIP and **Table 5-7**. The resulting level of service is described in Section 4.4.

4.3.3.2 Preferred Alternative

Interchange use is based on the combined influence from new interchanges at Custer and South Helena, plus improvements to the Capitol interchange. Approximately 44,000 daily vehicle trips are projected to use the new Custer interchange in 2025. This alternative also increases interchange activity at the Capitol interchange by

ALTERNATIVE SCENARIOS



Legend

○ = 10,000 ○ = 20,000 Total Daily Volume on All Interchange Ramps
 ○ = Existing Interchange **XX** = Volumes in Thousands
 ● = Proposed Interchange or Major Improvement **XXX** = Total Corridor Utilization (Daily Ramp Volumes)

Source: MDT, Helena Urban Travel Demand Forecast Model

I-15 2025 Average Weekday Interchange Utilization

INTERSTATE 15 CORRIDOR
 Montana City to Lincoln Road

Carter-Burgess

Figure 4-6

approximately 15% over the No-Action Alternative while Cedar Street interchange traffic would be reduced by approximately 20%. Approximately 16,000 daily trips are projected to use the new South Helena interchange. Minor differences occur at the existing Lincoln Road interchange and Montana City interchanges.

4.3.3.3 Alternative 2

Interchange use is based on the combined influence from new interchanges at Forestvale Road and South Helena, plus improvements to the Capitol interchange. The Forestvale interchange is projected to accommodate approximately 26,000 daily vehicle trips by 2025. This alternative increases interchange use at the Capitol interchange by approximately 20% over the No-Action Alternative. The Cedar Street interchange traffic would be reduced by approximately 10%. Approximately 16,000 daily trips are projected to use the new South Helena interchange, and the Lincoln Road interchange is projected to experience a decrease in interchange activity of approximately 20%. No notable differences occur at the Montana City interchange.

4.3.4 Vehicle Miles of Travel

Vehicle Miles of Travel (VMT) is a measure of overall regional travel based on roadway volumes and distances. Year 2025 VMT was estimated for the No-Action Alternative and the build alternatives, and was summarized for the different roadway types represented in the Helena Urban Travel Demand Forecast Model. Highways are exclusively represented by I-15. Arterials include roadways such as US 12, N. Montana Avenue and Custer Avenue. Roadways such as Sierra Road, Green Meadow Drive and Rodney Street are considered collector streets and have been grouped with other low-volume neighborhood streets to represent the collector/local category.

Key observations related to VMT and changes from the No-Action Alternative are presented below for the alternatives.

4.3.4.1 No-Action Alternative

For the No-Action Alternative, the estimated 2025 VMT of over 2.5 million would be accommodated largely on the existing roadway system, since no substantial transportation infrastructure projects are programmed in the Helena area other than those listed in the STIP and **Table 5-7**. VMT could be higher in the No-Action Alternative than the build alternatives due to drivers either needing to travel out-of-direction to their destinations, or drivers avoiding congested areas and driving longer distances.

4.3.4.2 Preferred Alternative

The Preferred Alternative is estimated to reduce overall VMT in comparison to the No-Action Alternative. A reduction of 0.2% is projected as shown in **Table 4-1**. There is an increase in highway VMT of 13% that is offset by reductions of 4% and 3% for both arterial roadways and collector/local facilities, respectively.

Table 4-1 summarizes the total VMT for the No-Action Alternative and the Preferred Alternative and highlights the percent change from the No-Action to the Preferred Alternative. The results represent statistics for the entire travel model area. VMT calculations are based on an average weekday (24-hour period).

Table 4-1
Vehicle Miles of Travel (VMT) Summary (Year 2025)
for the Preferred Alternative

| Total VMT | | | |
|---------------------------------------|------------------|-----------------------|----------------|
| Roadway Type | No-Action | Preferred Alternative | Percent Change |
| Highway | 493,000 | 557,000 | 13.0% |
| Arterial | 883,000 | 851,000 | -3.7% |
| Collector/Local | 1,155,000 | 1,119,000 | -3.1% |
| Total VMT | 2,531,000 | 2,527,000 | -0.2% |
| Note: VMT is rounded to nearest 1,000 | | | |

4.3.4.3 Alternative 2

Alternative 2 is estimated to increase overall VMT in comparison to the No-Action Alternative. An increase of 0.1 % is projected. There is an increase in highway VMT of 15% that is offset by reductions of 4% and 3% for both arterial roadways and collector/local facilities, respectively. When compared to Alternative 1, Alternative 2 is projected to have higher VMT on I-15 and lower VMT on other streets in the model area.

Table 4-2 summarizes the total VMT for the No-Action Alternative and Alternative 2 and highlights the percent change from the No-Action Alternative to Alternative 2.

Table 4-2
Vehicle Miles of Travel (VMT) Summary (Year 2025)
for Alternative 2

| Total VMT | | | |
|---------------------------------------|------------------|------------------|----------------|
| Roadway Type | No-Action | Alternative 2 | Percent Change |
| Highway | 493,000 | 569,000 | 15.5.0% |
| Arterial | 883,000 | 846,000 | -4.2% |
| Collector/Local | 1,155,000 | 1,117,000 | -3.2% |
| Total VMT | 2,531,000 | 2,533,000 | -0.1% |
| Note: VMT is rounded to nearest 1,000 | | | |

4.3.5 Vehicle Hours of Travel

A summary of Vehicle Hours of Travel (VHT) was prepared to evaluate the impact of the proposed I-15 interchange improvements on travel speeds and time spent driving. Year 2025 VHT was estimated for the alternatives, and was summarized for the three groups of roadway types. VHT calculations are based on an average weekday (24-hour period).

Key observations related to VHT and changes from the No-Action Alternative are presented below for the alternatives.

4.3.5.1 No-Action Alternative

For the No-Action Alternative, the estimated 2025 VHT of over 68,000 would be accommodated largely on the existing roadway system, since no substantial transportation infrastructure projects are programmed in the Helena area other than those listed in the STIP and **Table 5-7**. VHT is higher in the No-Action Alternative than the build alternatives due to higher congestion levels in the No-Action Alternative, and with drivers possibly choosing to travel out-of-direction (and longer times) to their destinations to avoid congested areas.

4.3.5.2 Preferred Alternative

The Preferred Alternative provides lower overall projected VHT than the No-Action Alternative. The highway VHT is also the least between the two build alternatives, even though this alternative results in the most users at I-15 interchanges. This is due to the shorter trip lengths along I-15 in comparison to Alternative 2.

Table 4-3 summarizes the total VHT for the No-Action Alternative and the Preferred Alternative and highlights the changes between the alternatives. The results represent statistics for the entire travel model area.

Table 4-3
Vehicle Hours of Travel (VHT) Summaries (Year 2025)
for the Preferred Alternative

| Total VHT | | | |
|------------------|---------------|-----------------------|----------------|
| Roadway Type | No-Action | Preferred Alternative | Percent Change |
| Freeway | 7,100 | 7,900 | 10.9% |
| Arterial | 22,300 | 21,400 | -4.3% |
| Collector/Local | 38,700 | 37,700 | -2.8% |
| Total VHT | 68,200 | 66,900 | -1.9% |

Note: VHT is rounded to nearest 100

Source: MDT, Helena Urban Travel Demand Forecast Model

4.3.5.3 Alternative 2

When compared to the No-Action Alternative, percent VHT changes projected for Alternative 2 are generally consistent with the estimated changes in VMT for each roadway type. Overall VHT is reduced by 1.6%⁴, representing a minor enhancement in average travel speeds throughout the region.

Table 4-4 summarizes the total VHT for the No-Action Alternative and Alternative 2 and highlights the percent change from the No-Action alternative to Alternative 2.

Table 4-4
Vehicle Hours of Travel (VHT) Summaries (Year 2025)
for Alternative 2

| Total VHT | | | |
|------------------|---------------|---------------|----------------|
| Roadway Type | No-Action | Alternative 2 | Percent Change |
| Freeway | 7,100 | 8,100 | 13.4% |
| Arterial | 22,300 | 21,300 | -4.6% |
| Collector/Local | 38,700 | 37,700 | -2.6% |
| Total VHT | 68,200 | 67,100 | -1.6% |

Note: VHT is rounded to nearest 100

Source: MDT, Helena Urban Travel Demand Forecast Model

4.4 Interchange/Intersection Operations

An operations analysis of interchanges based on Level of Service (LOS) was conducted for the No-Action Alternative, the Preferred Alternative and Alternative 2. LOS

⁴ Small percentage changes in VHT are considered meaningful when comparing alternatives as described in Section 4.3.1.

analysis for intersections and for highway characteristics (mainline and ramps) was done based on guidelines shown in the *Highway Capacity Manual 2000* (HCM) (Transportation Research Board, 2000) and associated software package Highway Capacity Software (HCS).

MDT has level of service (LOS) standards for different roadway types to ensure efficient traffic flow is maintained on I-15, US 12, and other state facilities. The criterion is LOS B for I-15, including mainline lanes and ramp merges and diverges. This high quality LOS is intended to minimize delay to through traffic on I-15 with an additional goal of maintaining safe operations. At urban interchanges, the LOS criterion for ramp intersections with crossroads is LOS C.

The traffic model developed by MDT forecasts the 2025 daily traffic levels only. Traffic operations analysis using HCM methodology requires peak hour traffic information. To calculate peak hour traffic volumes for the typical morning (AM) and evening (PM) peak hours, existing factors and patterns are referenced that relate to current known conditions in the local area. For example, the existing peak hour is currently over 10% of the daily traffic volume at the Capitol interchange.

Experiences in other urban areas have shown that this peak hour percentage would decrease over time as the area becomes more urbanized. This is due in part to drivers changing their travel times to "miss the traffic," causing more trips to occur during non-peak periods. Flexible work schedules and other transportation demand management strategies, whether formally promoted or adopted individually by drivers, would result in peak hours becoming less than 10% and as low as 7% or 8% of the daily traffic volume.

For the analysis of the EIS alternatives, 10% of the daily traffic was used as a basis of comparison for evaluating peak hour traffic. This should be a conservative value for 2025 traffic volumes, and should be reasonable given the lack of accuracy possible in forecasting beyond 20 years.

Due to funding availability, project phasing will be required. Phasing of improvements is dependent upon many factors including funding availability, actual development, and traffic operations. Prior to any phasing decisions MDT will evaluate the temporary traffic operation impacts in relation to LOS criteria and the purpose and need identified in the FEIS.

4.4.1 No-Action Alternative

There are no committed projects in the I-15 Corridor that substantially increase the capacity of the interstate or at interchanges before year 2025 with the No-Action Alternative with the exception of the reconstruction of the Lincoln Road interchange.

The LOS analysis of the 2025 No-Action Alternative is basically an analysis of the existing roadway network with the addition of the growth of traffic from years 2001 to 2025.

The addition of 25 years of land use growth without corresponding improvements to the roadways would result in generally poor LOS at interchanges throughout the I-15 Corridor. The operations of the I-15 mainline and the ramps to and from I-15 would be generally serviceable (LOS C) but would not meet MDT level of service standards at the Capitol interchange ramps, the Montana City interchange ramps, and the I-15 mainline between the Capitol and Cedar Street interchanges. The following is a summary of forecasted traffic operations for the No-Action Alternative at the key interchanges and crossings of I-15.

Montana City Interchange

Continuing growth in the southern part of the study area would cause traffic volumes using the Montana City interchange to increase. Year 2025 LOS would be F at each of the ramp intersections with the crossroad, even assuming traffic signals are installed and minor right turn lanes are added. It should be noted that the addition of traffic signals at this interchange would require special design consideration to accommodate left turning trucks onto the narrow bridge. Signals would also further restrict the ability of drivers to simply cross I-15 at this location. There is no room for the needed additional left turn lanes at this interchange due to the width of the existing bridge. The northbound on-ramps to I-15 would operate at LOS C in the AM peak hour. All other ramp merges and diverges will operate at LOS B or better.

Capitol Interchange

The 2025 traffic volume forecasts at this interchange result in the weave movement on I-15 between the two loop ramps to operate at LOS C using HCM methodology. However, the HCM methodology does not account for specific design features of this weave, such as inadequate sight distances and sub-standard acceleration and deceleration lengths for the ramps.

LOS at the signalized ramp intersection with US 12 would deteriorate to LOS F, even with minor striping changes. The Fee Street intersection with US 12 just west of the interchange plays an integral role in the operations of the Capitol interchange, since traffic congestion at the Fee Street signal causes backups to queue into the Capitol interchange. The Fee Street signal LOS would continue to be LOS F during the peak period, and the length of the peak period would continue to increase.

Cedar Interchange

The 2025 traffic volume forecasts can be accommodated at the recently reconstructed Cedar interchange with a degradation in LOS (LOS D in some cases). LOS C can be achieved with some minor improvements on North Washington Street.

Traffic volumes on Cedar Street west of the interchange would be nearing the functional capacity of the existing three-lane road, meaning worse than the desirable LOS C, but still passable by motorists who would experience some delay and congestion at intersections.

Custer Avenue Overpass

Traffic volumes are forecasted to almost double from the existing 14,000 vehicles to about 25,000 vehicles per day in 2025. This traffic demand would be at or above the functional capacity of the existing two-lane roadway (worse than LOS C), resulting in congestion delay crossing I-15 and at adjacent intersections that cannot handle the traffic volume. This congestion will further constrain east-west traffic flow across I-15. Safety will be further compromised as more vehicles are forced to use the existing narrow bridge crossing. Pedestrian and bicycle safety also will be compromised by the potential conflict with more vehicles on the narrow bridge.

Lincoln Interchange

Lincoln interchange reconstruction is currently assumed to have three driving lanes on the crossing (one lane each way, plus a left turn lane) plus standard pedestrian and bicycle accommodations. Year 2025 traffic forecasts at this interchange can be adequately accommodated with the proposed three-lane bridge and interchange reconstruction (as shown in **Table 4-6** on page 4-25). Although the LOS of the two proposed signals at the ramp intersections meets MDT criteria, the introduction of signals at these ramps would introduce some delay for drivers who cross I-15 at this location. Ramp merges and diverges to and from I-15 would operate at LOS B or better.

4.4.2 Preferred Alternative

The Preferred Alternative assumes new I-15 interchanges at Custer Avenue and at the South Helena location about 2.7 kilometers (1.6 miles) south of the Capitol interchange. Both interchanges would be designed to accommodate forecasted intersection traffic volumes at no worse than LOS C. The ramps merging and diverging to and from I-15 at each interchange would be designed to operate at no worse than LOS B.

Montana City Interchange

Montana City interchange reconstruction is currently assumed to have three driving lanes on the crossing (one lane each way plus a left turn lane) plus standard pedestrian and bicycle accommodations. Year 2025 traffic forecasts at this interchange are similar to those shown for the No-Action Alternative. As shown in **Table 4-5** this volume can be adequately accommodated with the proposed three-lane bridge and other associated crossroad improvements. Although the LOS of the two proposed signals at the ramp intersections meets MDT criteria, the introduction of signals at these ramps would introduce some delay for drivers who cross I-15 at this

location. Ramp merges and diverges to and from I-15 would operate at LOS B or better.

Table 4-5
Montana City Interchange LOS with Improvements (Year 2025)

| | AM | PM |
|--|-----------|-----------|
| Signal at West Ramps/Montana City Road | C | C |
| Signal at East Ramps/Montana City Road | C | A |

South Helena Interchange

The proposed design for the South Helena interchange would be a diamond interchange with at least a three-lane bridge plus pedestrian accommodations over I-15. The South Helena interchange would initially have no connection to the east and would connect on the west to the west side Frontage Road extension of Colonial Drive (a supporting element). The east side connection to this interchange would be part of the planned growth area in southeast Helena. The ramps to-and-from I-15 at the South Helena interchange would be standard merge or diverge designs and would not require auxiliary lanes on I-15 to maintain LOS B.

Capitol Interchange

The Preferred Alternative would increase the traffic volumes at the Capitol interchange by approximately 15% compared to the No-Action Alternative. Reconstruction of the Capitol interchange includes substantial turn-lane and through-lane improvements. An additional feature proposed is a more direct connection between I-15 southbound/US 12 westbound and Colonial Drive to accommodate the high traffic forecasted to use the Colonial Drive/Frontage Road route. The combination of these improvements would result in an interchange that can accommodate intersection traffic at LOS C or better. Ramp merges and diverges would operate at LOS B or better. The proposed improvements would also improve the LOS at the two Fee Street intersections to LOS C or better.

Cedar Interchange

The construction of the Custer interchange would reduce the traffic volume at the Cedar interchange by approximately 20%. This volume reduction would improve traffic operations at Cedar interchange slightly. Under the No-Action Alternative, the Cedar interchange LOS at the signalized intersections was bordering on LOS C/D. The volume reduction with the new Custer interchange assures that the peak hour LOS would not be worse than LOS C.

Custer Interchange

The proposed design for the Custer interchange is a standard diamond interchange in the northeast, southeast and southwest quadrants and a loop ramp in the northwest

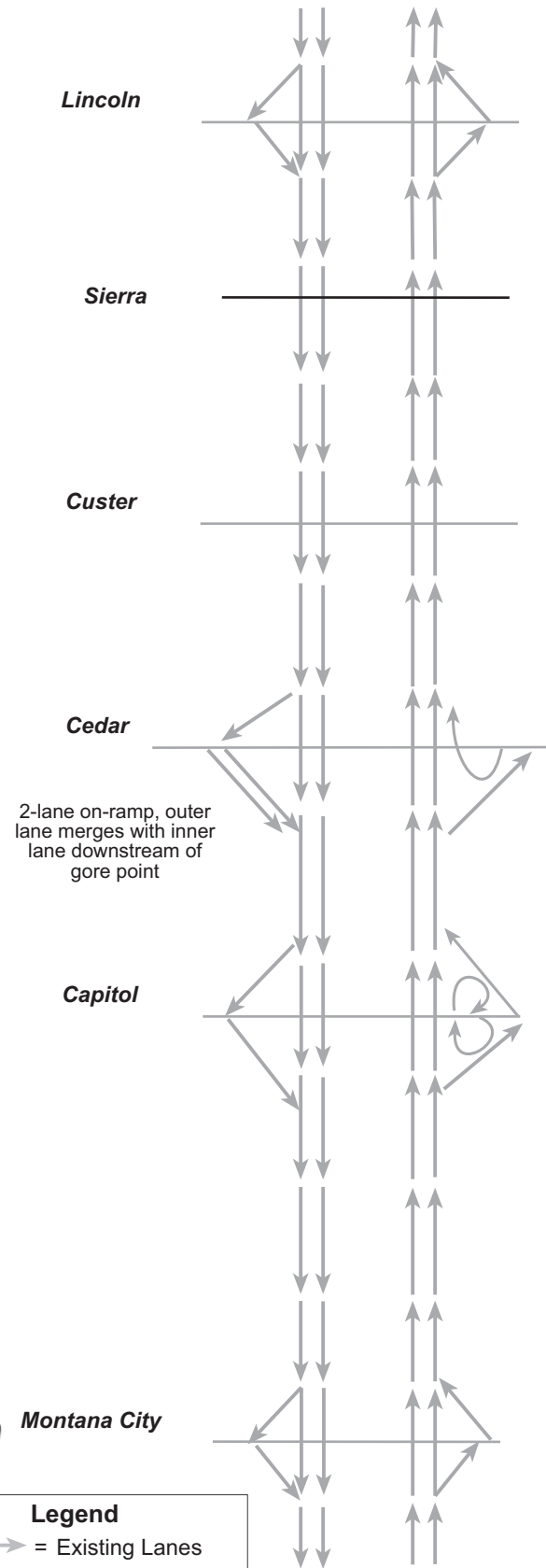
quadrant to accommodate the high westbound to southbound turn volumes. The planned cross section of the Custer Avenue bridge over I-15 is shown on **Figure 2-12** and includes bicycle/pedestrian accommodations. This loop ramp design also facilitates a longer weave section along I-15 between the Custer on-ramp and Cedar off-ramp. The additional traffic entering and exiting I-15 between the Custer interchange and Capitol interchange would be accommodated by additional auxiliary lanes between the ramps, with the lane diagram shown in **Figure 4-7**. This is the laneage required to maintain LOS B operation on I-15 through the year 2025, which minimizes disturbance to through traffic on the interstate. The ramp spacing between the Custer and Cedar ramps can be designed to meet minimum requirements for ramp spacing on a freeway, but it should be noted that accident potential increases as the spacing between on- and off ramps is reduced. For Custer Avenue traffic operations, the laneage would be designed to accommodate no worse than LOS C operations at the two new signals serving the interchange ramps. Although the LOS of the two proposed signals at the ramp intersections meets MDT criteria, the introduction of signals at these ramps would introduce some delay for drivers who cross I-15 at this location, compared to the No-Action Alternative. Having signals on the ramps does not reduce the capacity of Custer Avenue to carry traffic east and west. The signals at N. Montana Avenue, Sanders Street, and N. Washington Street add similar traffic control as would be realized by the proposed interchange ramps. The delay imposed by the addition of signals at the ramps on Custer Avenue can be minimized through good signal progression within the corridor. Signalized intersections introduce additional conflict points on the roadway, which could increase accident potential.

The need for auxiliary lanes along I-15 to maintain LOS B on the interstate and at ramp merges and diverges was determined during the alternatives analysis and traffic analysis conducted for this EIS. Auxiliary lanes provide additional capacity between interchanges to allow more efficient merging, diverging, and weaving of traffic entering and exiting the freeway. During the traffic analysis it was determined that a substantial portion of the 2025 traffic volumes would be using I-15 for shorter trips, for example entering at Cedar or Custer and exiting at the Capitol interchange, or visa-versa. These traffic patterns were used to determine the auxiliary lanes that should be added as part of the Preferred Alternative. A laneage diagram that shows where and how the auxiliary lanes are proposed is shown in **Figure 4-7**.

During the analysis of options for adding auxiliary lanes, addition to the outside of the existing lanes versus the inside (toward the median) of the existing lanes was explored. Widening to the inside would effectively shift the alignment of the mainline I-15 lanes to the inside, and the existing outside lane would become the auxiliary lane. Shifting the mainline I-15 lanes to the inside through the study area is generally the preferred method since it would have fewer right-of-way impacts. The design will require adding a median barrier along I-15 between approximately



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**No-Action Alternative
Existing Laneage**



Montana City

Legend

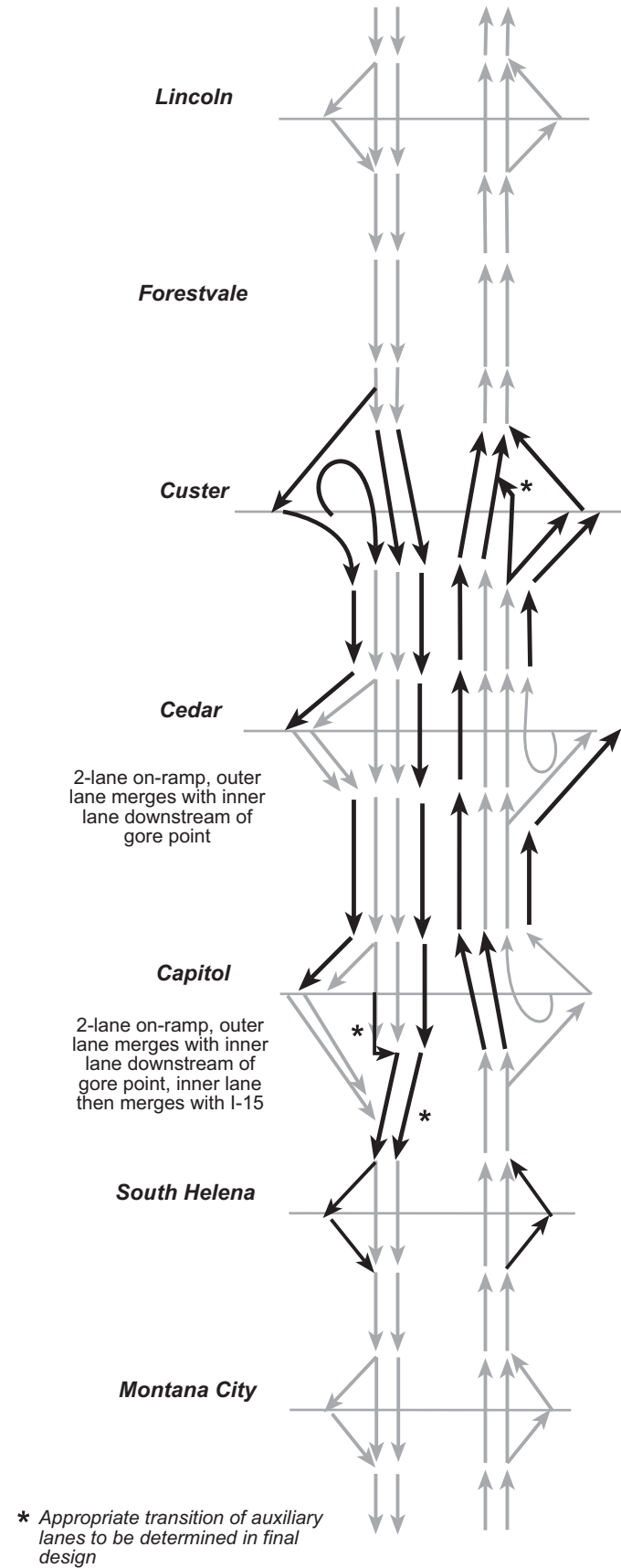
-  = Existing Lanes
-  = Proposed Lanes

Source: Carter & Burgess, 2003



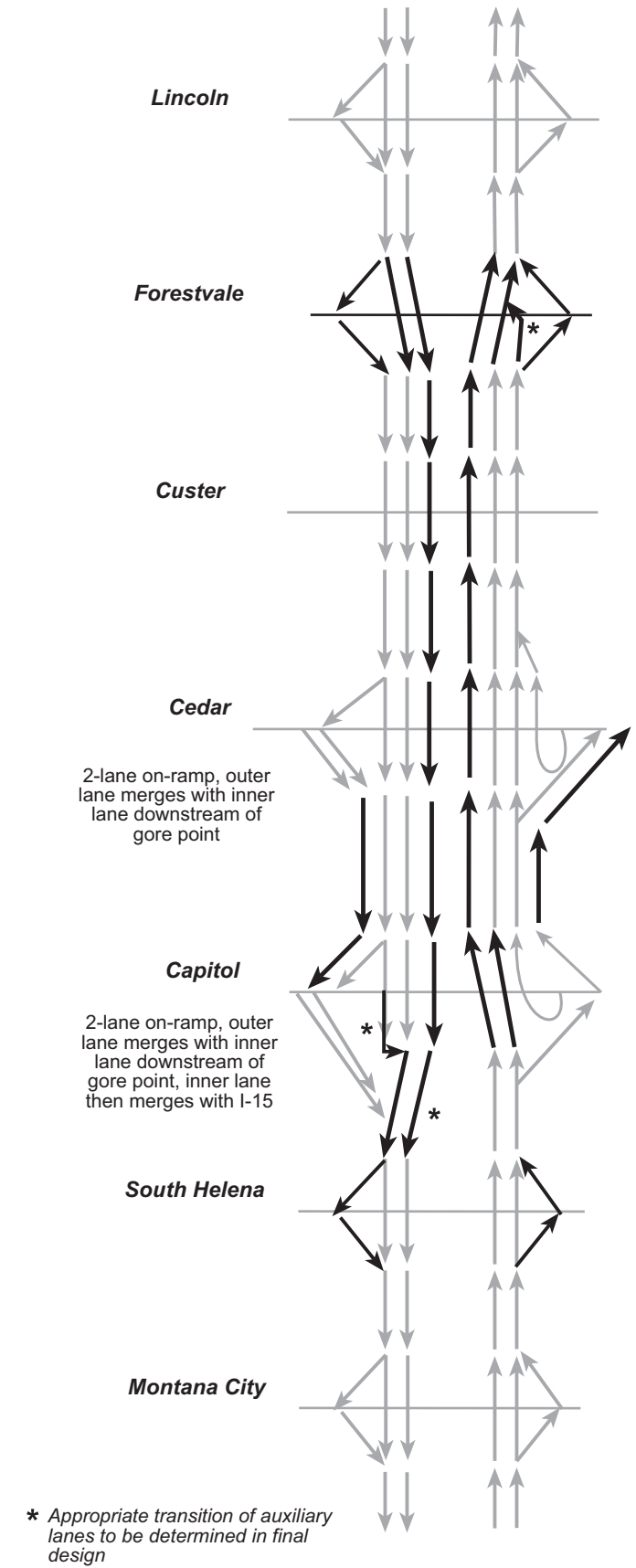
Carter=Burgess

**Preferred Alternative
(Alternative 1)
Ramp and Auxiliary Lane Locations**



* Appropriate transition of auxiliary lanes to be determined in final design

**Alternative 2
Ramp and Auxiliary Lane Locations**



* Appropriate transition of auxiliary lanes to be determined in final design

I-15 Laneage by Alternative

Figure 4-7

Custer Avenue and the Capitol interchange. Some portions of the existing I-15 lanes, particularly in curves, may need to be reconstructed. A secondary auxiliary lane between the Capitol and Cedar ramp and between the Cedar and Custer ramps will also be constructed in both directions of I-15. This secondary auxiliary lane will be added to the outside of the existing lanes. Based on the early level of design completed, it appears that the minor amounts of additional right-of-way for the auxiliary lanes as described above may be required depending on final design. Retaining walls are anticipated with the approaches to the structures to keep the expanded highway envelope within the existing right-of-way where necessary to minimize right-of-way impacts. No business or residential structures are anticipated to be relocated. Right-of-way may be required at interchange ramp locations, although retaining walls could be considered in final design to minimize those right-of-way impacts. Each auxiliary lane is proposed to be the standard 3.6 meters (12 feet) lane width. The inside shoulder along the median barrier are proposed to be the standard 3.0 meters (10 feet), and the outside shoulder width can vary from 2.4 meters (8 feet) to 3.6 meters (12 feet), with the final width of outside shoulder to be determined during final design.

Lincoln Interchange

Lincoln interchange reconstruction is currently assumed to have three driving lanes on the crossing (one lane each way, plus a left turn lane) plus standard pedestrian and bicycle accommodations. Year 2025 traffic forecasts at this interchange can be adequately accommodated with the proposed three-lane bridge and interchange reconstruction as shown in **Table 4-6**. Although the LOS of the two proposed signals at the ramp intersections meets MDT criteria, the introduction of signals at these ramps would introduce some delay for drivers who cross I-15 at this location. Ramp merges and diverges to and from I-15 would operate at LOS B or better.

Table 4-6
Lincoln Interchange LOS with Improvements (Year 2025)

| | AM | PM |
|-----------------------------------|-----------|-----------|
| Signal at West Ramps/Lincoln Road | A | A |
| Signal at East Ramps/Lincoln Road | C | C |

4.4.3 Alternative 2

Alternative 2 assumes new I-15 interchanges at Forestvale Road and at the South Helena location about 2.7 kilometers (1.6 miles) south of the Capitol interchange. Both interchanges would be designed to accommodate forecasted intersection traffic volumes at no worse than LOS C. The ramps merging and diverging to and from I-15 at each interchange would be designed to operate at no worse than LOS B. The impacts are similar to the Preferred Alternative except as follows:

Cedar Interchange

The construction of the Forestvale interchange in Alternative 2 would reduce the traffic volume at the Cedar interchange by approximately 10%. This volume reduction would improve traffic operations at the Cedar interchange slightly. In the No-Action Alternative, the Cedar interchange LOS at the signalized intersections was bordering on LOS C/D. The volume reduction with the Custer interchange in Alternative 2 would be enough that the peak hour LOS will not be worse than LOS C.

Forestvale Interchange

The proposed design for the Forestvale interchange is a diamond interchange. Forestvale Road would be extended east from N. Montana Avenue to the new interchange, and then further east to end at the re-aligned east side Frontage Road. Forestvale Road and the re-aligned east side Frontage Road would mostly be a two-lane road with additional laneage at intersections. LOS C at the intersections can be maintained with a three-lane cross section on the Forestvale bridge over I-15. The east side Frontage Road would require some additional turn lanes near its intersection with Forestvale Road to maintain LOS C. Forestvale Road also would need additional turn lanes at the intersection with N. Montana Avenue. The extension of Forestvale Road would add a signal at the N. Montana Avenue intersection and on the east side Frontage Road. Although the LOS of the signals meets MDT criteria, the introduction of signals at these locations would introduce some delay for drivers along those roadways, compared to the No-Action Alternative. In addition, signalized intersections introduce additional conflict points on the roadway, which could increase accident potential.

The additional traffic entering and exiting I-15 between the Forestvale interchange and Capitol interchange would be accommodated by additional auxiliary lanes between the ramps, with the lane diagram shown in **Figure 4-7**. This is the laneage required to maintain LOS B operation on I-15 through the year 2025 and at the ramp merge and diverge points. The design of the auxiliary lanes would require minor modifications to the ramps serving the Cedar interchange.

The difference between adding auxiliary lanes to the outside of the existing I-15 lanes compared to adding to the inside of existing lanes was explored during the alternatives analysis. The laneage diagram shown in **Figure 4-7** represents the approach of shifting the mainline I-15 lanes to the inside in each direction, with an additional auxiliary lane in each direction to the outside of the mainline lanes between Capitol and Cedar. Shifting the mainline I-15 lanes to the inside would require construction of a median barrier and may require reconstruction of a substantial portion of the existing I-15 lanes to meet MDT cross section standards for a barrier separated freeway. Shifting the mainline I-15 lanes to the inside would likely result in fewer right-of-way issues since the outside edge of the freeway would not

change (except at interchanges) (see Section 5.4.6). Adding an auxiliary lane to the outside between Capitol and Cedar would result in an additional 3.6 meters (12 feet) of pavement added to each side of I-15. During final design, the freeway design needs and right-of-way constraints can be further evaluated to determine the best approach to adding the auxiliary lanes.

4.5 Emergency Response Access

An analysis of emergency response access was conducted to evaluate the effectiveness of each alternative in serving trips to and from key facilities in the study area. The Helena Urban Travel Demand Forecast Model was used to assess travel times from three representative locations in the study area. These included the West Valley Fire Station #1 (Forestvale Road/N. Montana Avenue), the Helena Fire Station #2 (11th Avenue/Hannaford Street), and St. Peter's Hospital (Broadway/California Street). **Figure 4-8** illustrates these locations within the study area.

For each alternative, the travel demand model was used to assess the sum of system-wide travel times from each representative location to all other destinations. This was done to account for the random nature of emergency response needs, even though jurisdictional responsibilities usually limit the area that is served by each facility.

Figure 4-9 through **Figure 4-11** graphically represent the total system wide travel times from each of the three locations to all destinations throughout the region. The total system-wide travel time is a summation of all travel times from one location to all other destinations within the travel model. This function of the travel model allows the measurement of all possible travel paths within the traffic model area, which includes the entire Helena Valley, roughly 48 kilometers (30 miles) in all directions from downtown Helena. The lower the total travel time the faster the emergency response time. Observations regarding these statistics and the influence of each alternative regarding specific travel patterns are summarized below.

4.5.1 No-Action Alternative

The direct impact of the No-Action Alternative is that there would be no improvements to emergency response access in the study area. The emergency response access would continue to worsen due to an increase in traffic congestion at all interchanges and crossings of I-15.

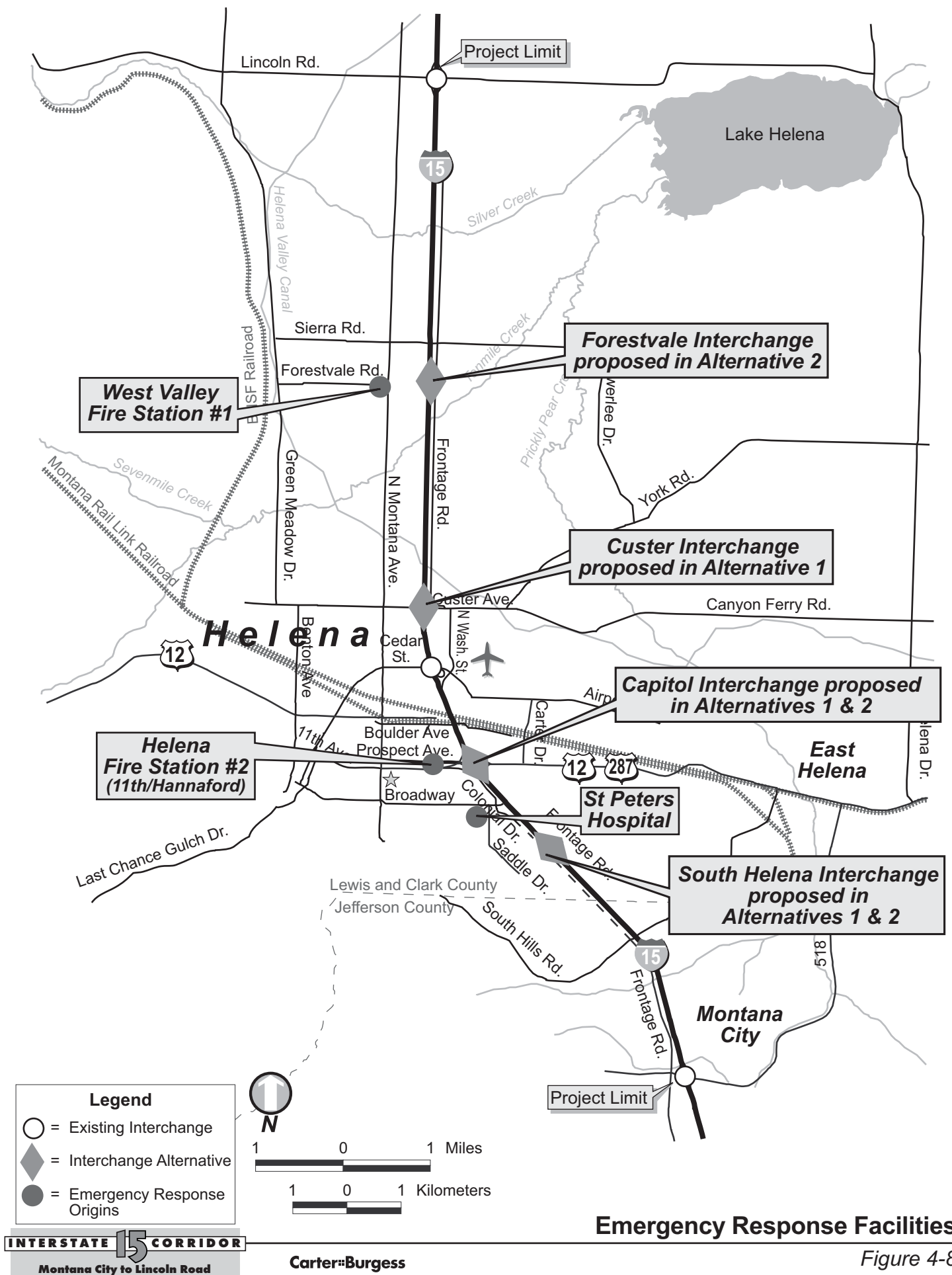
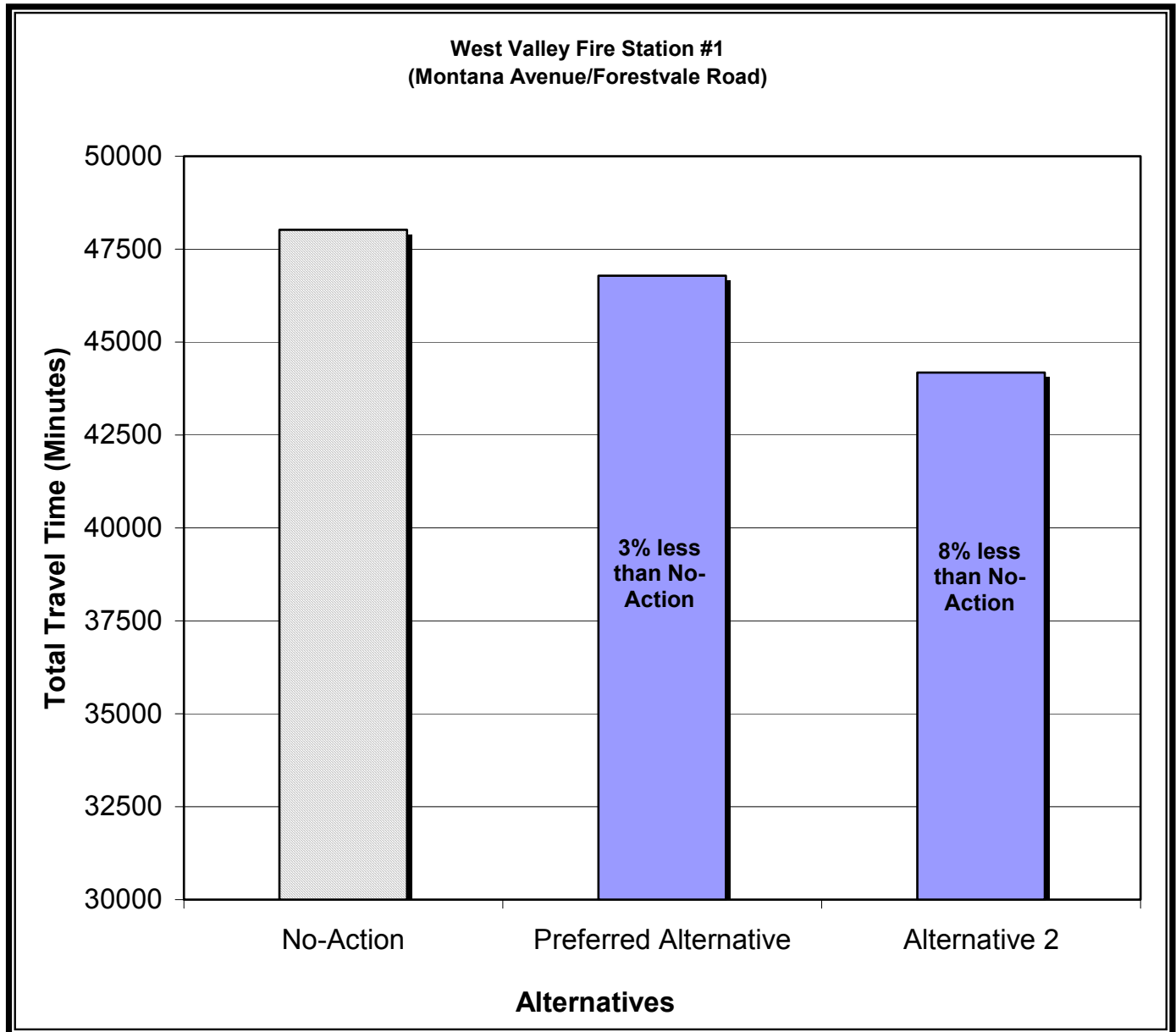


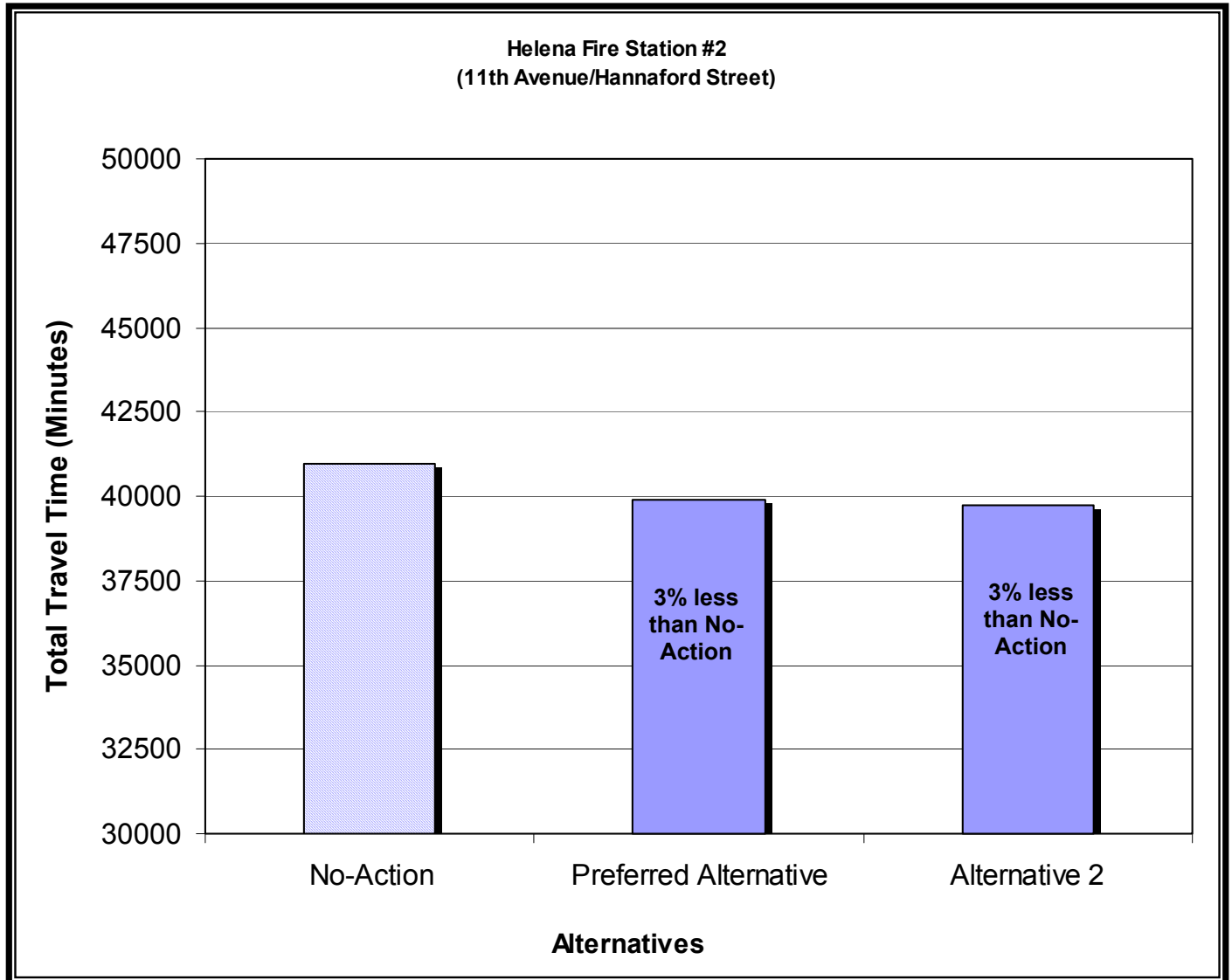
Figure 4-9
System-Wide Emergency Response Access Analysis (Year 2025)
(West Valley Fire Station #1)



Source: MDT, Helena Urban Travel Demand Forecast Model

Note: Emergency response times represent the total system-wide travel time from this location to all model destinations.

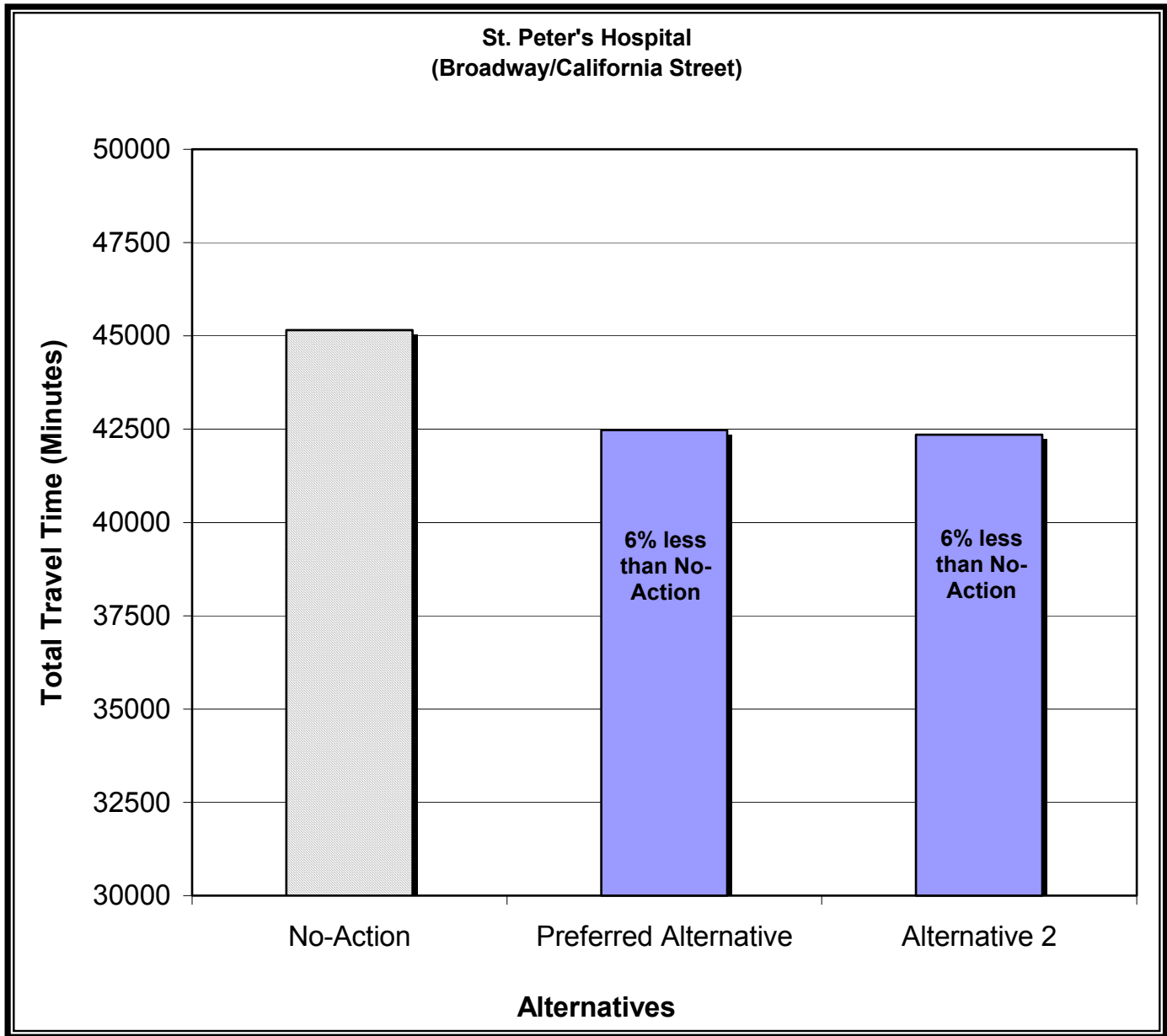
Figure 4-10
System-Wide Emergency Response Access Analysis (Year 2025)
(Helena Fire Station #2)



Source: MDT, Helena Urban Travel Demand Forecast Model

Note: Emergency response times represent the total system-wide travel time from this location to all model destinations.

Figure 4-11
System-Wide Emergency Response Access Analysis (Year 2025)
(St. Peter's Hospital)



Source: MDT, Helena Urban Travel Demand Forecast Model

Note: Emergency response times represent the total system-wide travel time from this location to all model destinations.

4.5.2 Preferred Alternative

The Preferred Alternative provides an enhancement to travel times to and from each of the representative facilities. When comparing the Preferred Alternative to the No-Action Alternative, the greatest system-wide travel time improvement is from St. Peter's Hospital to all destinations. The total system-wide travel time at this location for the Preferred Alternative is approximately 6% less (faster) than the No-Action Alternative. When considering trips from all three representative locations (West Valley Fire Station #1, Helena Fire Station #2, and St. Peter's Hospital), the total system-wide travel time is approximately 4% less (faster) than the No-Action Alternative.

4.5.3 Alternative 2

The most notable emergency response improvements provided by Alternative 2 are related to access from the West Valley Fire Station #1. The total system-wide travel time at this location is approximately 8% less (faster) than the No-Action Alternative. These improvements are directly associated with a new Forestvale interchange. When considering trips from all three representative locations (West Valley Fire Station #1, Helena Fire Station #2, and St. Peter's Hospital), the total system-wide travel time for Alternative 2 is approximately 6% less (faster) than the No-Action Alternative.

4.6 Roadway Connectivity and Access to Community Resources

The alternatives were evaluated for connectivity and continuity in relation to the regional roadway system. In addition, the change in access provided to community resources was assessed for each alternative. For the purposes of this evaluation, community resources include locations such as the Helena Regional Airport, downtown Helena, Montana City, commercial and retail districts, schools, parks, and other community centers used by the general public.

4.6.1 No-Action Alternative

For the No-Action Alternative there would be no changes or improvements to roadway connectivity and access to community resources by 2025 since no substantial transportation infrastructure projects are programmed in the Helena area. **Table 5-7** lists the reasonably foreseeable transportation projects in the study area. The direct impact of the No-Action Alternative is that access to community resources would worsen due to an increase in traffic congestion at all interchanges and crossings of I-15 other than at Lincoln Road.

4.6.2 Preferred Alternative

The Preferred Alternative combines the connectivity and access characteristics of new I-15 interchanges at South Helena and Custer Avenue, in addition to improvements at the existing Capitol interchange.

South Helena Interchange

The addition of a South Helena interchange would provide a new connection to I-15 via a west side Frontage Road and new roadway connections to US 12 from the east. There are currently no east-west crossings of I-15 in this area or existing roads that align on the east side of the highway. This alternative would create a new crossing of I-15 between US 12 (Capitol interchange) and County Road 282/South Hills Road, a distance of 4.3 kilometers (2.7 miles). Current I-15 interchange spacing between the Capitol interchange and the Montana City interchange is 7 km (4.4 miles). The new interchange would be located approximately 2.7 km (1.6 miles) south of the Capitol interchange.

Community resources that would realize improved access from a South Helena interchange include Waterford, Hunters Pointe, Sonheaven assisted living facilities, Smith School and several proposed neighborhood parks. This option also provides minor improvements in access to Montana City and the hospital area, and indirect access to commercial areas east of I-15 on US 12.

Capitol Interchange Improvements

Capitol interchange improvements primarily address the interchange configuration. The interchange currently provides access from US 12 to and from I-15, and facilitates the primary east-west travel route across I-15 and through Helena. Reconfiguration of the interchange would provide more direct connectivity to Colonial Drive and the local street system in the southwest quadrant of the interchange.

The Capitol interchange currently serves a large number of community resources including several community schools (including Helena High, Bryant Elementary, Smith Elementary, Helena College of Technology, and Rocky Mountain Christian High School), the Helena Fire Station #2 (11th/Hannaford Avenue), the City Library, parks north of Prospect Avenue between N. Montana Avenue and Lamborn Street, state government offices, and several low-income housing areas on or near Prospect Avenue. Improvements to the interchange would enhance access to the Capitol Hill Mall, downtown Helena and the commercial areas east of I-15 on US 12.

Custer Interchange

A new Custer interchange would be located approximately 1.2 kilometers (0.7 mile) north of the existing Cedar Street interchange and be configured to provide continuous auxiliary lanes between the Cedar Street and Custer Avenue interchanges.

An interchange at Custer Avenue would provide direct connectivity to I-15 from an established roadway corridor that extends both east and west of the highway within the designated Urban Area. Custer Avenue currently extends approximately 3.8 kilometers (2.4 miles) west of I-15 to Horseshoe Bend Road, and connects with several other arterial and local roadways including N. Montana Avenue, North Benton Avenue and Green Meadow Drive. Directly east of I-15, Custer Avenue provides connections to the east side Frontage Road and North Washington Street. Approximately 1.6 kilometers (1 mile) to the east of I-15, the facility divides into Canyon Ferry Road and York Road, both of which serve the large rural areas northeast of the Helena city limits identified as a Transition Area. These areas are currently experiencing expanded development and also serve as access corridors to the Canyon Ferry and Lakeside recreational areas as well as the Helena National Forest. The Preferred Alternative would include the widening of Custer Avenue that is not included in the No-Action Alternative, thus providing additional capacity for traffic making east-west connections over I-15. However, the addition of freeway access at Custer would add two signals on the Custer corridor, which could increase delay to east-west drivers.

The Custer Avenue corridor and direct roadway extensions serve a number of community resources east and west of I-15 including Capitol High School, Four Georgians School, Bill Roberts Golf Course, the East Valley Fire Station # 2 (York Road/Tizer Drive), and Warren Elementary School. The roadway also provides access to the N. Montana Avenue commercial area and the Helena Regional Airport.

4.6.3 Alternative 2

Connectivity and access improvements associated with Alternative 2 include new I-15 interchanges at Forestvale and South Helena, plus improvements to the existing Capitol interchange. Impacts associated with the South Helena and Capitol interchanges are the same as for the Preferred Alternative (see Section 4.6.2).

Forestvale Interchange

A new Forestvale Road interchange would provide a new connection to I-15 between Lincoln Road and Cedar Street. There is currently a 10.7-kilometer (6.7-mile) spacing between interchanges in this segment. A Forestvale interchange would be located approximately 5 kilometers (3 miles) north of Cedar Street. Forestvale Road currently extends from Wagon Wheel Drive on the west to approximately 0.39 kilometer (0.24 mile) east of N. Montana Avenue. To accommodate a new interchange connection, the roadway would be extended east across I-15 to the east side Frontage Road, resulting in an overall Forestvale Road length of approximately 3 kilometers (2 miles). Intersections with Green Meadow Drive, N. Montana Avenue, and the east side Frontage Road would provide the primary connections to the surrounding roadway system. There are currently no plans for Forestvale Road to be extended to the east due to river and floodplain crossings.

Community resources realizing improved access from a Forestvale interchange include Rossiter Elementary and the West Valley Fire Station #1 (N. Montana Avenue/ Forestvale Road). A Forestvale interchange provides minimal direct access improvements to the Helena Regional Airport or existing commercial developments. However, travelers originating from the immediate area of the interchange would be provided improved access.

4.7 Traffic Safety

Safety concerns within the study area that were identified during project scoping and the development of alternatives include the Lincoln Road interchange, ramps on the Capitol interchange, narrow lanes on I-15 between the Capitol interchange and the Cedar Street interchange, narrow lanes on the Custer Avenue overpass at I-15, and speed differential between local traffic and through traffic using I-15. In addition, most cross-streets, I-15 mainline and I-15 interchanges have no safe accommodations for pedestrians and bicyclists.

The build alternatives and the supporting elements address safety and incorporate applicable MDT and AASHTO design standards. AASHTO standards for roadway design will be followed, with MDT design standards as supplemental guidance where applicable. Constructing these improvements to design and seismic standards is expected to provide for safe and functional traffic operations.

4.7.1 No-Action Alternative

Without the improvements identified in the build alternatives, most of the identified known safety concerns may not be addressed. Cross-streets, I-15 mainline and I-15 interchanges will have no improved accommodations for pedestrians and bicyclists except for the improvements at Lincoln Road and at the pedestrian underpass at I-15 as identified in the STIP. Other improvements to pedestrian and bicycle facilities are included in the *Draft Non-Motorized Transportation Plan*, March 2003. Crash data shows a high concentration of crashes where interstate ramps meet I-15, particularly at the Capitol interchange and Cedar Street interchange and these areas would not be improved under the No-Action Alternative.

4.7.2 Preferred Alternative

The Preferred Alternative includes improvements to the four identified safety concerns in the study area. All improvements included would be designed to applicable design and seismic standards that are expected to provide for safe and functional traffic operations.

The Preferred Alternative proposes to add ramps connecting Custer Avenue and I-15. The proximity of the proposed Custer ramps to the existing Cedar interchange ramps require special design considerations in order to meet minimum design criteria for ramp speeds and ramp spacing. The ramp spacing between the Custer and Cedar ramps can be designed to meet minimum requirements for ramp spacing on a freeway, but it should be noted that accident potential increases as the spacing between on- and off ramps is reduced. On Custer Avenue, the addition of signalized intersections introduces additional conflict points on the roadway, which could increase accident potential.

4.7.3 Alternative 2

Alternative 2 includes improvements to the four identified safety concerns in the study area. All improvements included would be designed to applicable design and seismic standards that are expected to provide for safe and functional traffic operations.

Alternative 2 proposes to add interchange ramps at Forestvale, approximately 4.8 kilometers (3.0 miles) north of the Cedar interchange. There are no issues with ramp spacing at this distance, so safety concerns related to interchange spacing is less than with Alternative 1. The extension of Forestvale Road would add a signal at the N. Montana Avenue intersection and on the east side Frontage Road. The introduction of signals at these locations introduces additional conflict points on the roadway, which could increase accident potential.

4.8 Pedestrian and Bicycle Facilities

4.8.1 No-Action Alternative

Under the No-Action Alternative, the following improvements may occur regardless of any improvements associated with the I-15 Corridor improvements. The improvements listed below have been identified as existing needs by local planning agencies and would provide several safe crossings of I-15 and improve conditions for pedestrians and bicyclists on other major streets in or near the study area.

Volume III of the Comprehensive Parks, Recreation and Open Space Plan for Lewis & Clark County proposes the following off-street trails, which could be shared between pedestrians and bicyclists and would access the I-15 Corridor: Silver Creek Trail, Tenmile Creek Trail, Prickly Pear Creek Trail and Holmes Gulch Trail (see Section 3.4.6.2). In addition, the *1993 Helena Transportation Plan* recommended an off-street trail be built along the irrigation canal through Helena and crossing I-15.

The following recommendations were proposed for on-street pathways in the *Comprehensive Parks, Recreation and Open Space Plan, Volume II, City of Helena, Montana, Plan*. On-street bike lanes are proposed for Lincoln Road, Boulder Avenue, N. Montana Avenue, Montana City, and Custer Avenue that would require widening. On-street bike lanes are also proposed for Broadway and a separated bikeway is proposed for Sierra Road.

The *2002-2003 Statewide Transportation Improvement Plan (STIP)* includes two projects that would improve pedestrian and bicycle facilities within the corridor. Reconstruction of the Lincoln Road interchange and construction of a pedestrian tunnel at the I-15/Capitol interchange would result in two additional safe crossings of the interstate highway.

The first draft of the *Non-Motorized Transportation Plan* prepared for the Helena area was available in March 2003. The plan will assist the city of Helena in planning, designing and implementing non-motorized facilities. Facilities include on-street facilities and multi-use trails, for use by pedestrians, bicyclists and are ADA accessible. There is also provision for separate equestrian trails. The March 2003 draft does not identify locations of trails. That will be provided in the final draft. However, based on conversation with the consultant preparing the plan, the proposed I-15 EIS pedestrian/bicycle improvements are consistent with the plan.

4.8.2 Preferred Alternative and Alternative 2

All proposed pedestrian and/or bicycle improvements would address the barrier effect of I-15 and provide mobility for all non-motorized modes of travel. Previous planning studies as well as public input from the I-15 planning process indicate that any pedestrian and bicycle improvements proposed in association with I-15 Corridor improvements would be strongly supported by the public.

For the purpose of evaluating impacts in this document and remaining flexible in the type of accommodation to be provided, it is assumed that 7.3 meters (24 feet) total, or 3.6 meters (12 feet) on each side of the road, would be provided at every proposed interchange or reconstructed overpass (Montana City, South Helena, Capitol, Custer, Forestvale, Lincoln) for pedestrian and bicycle accommodations. This additional 7.3 meters (24 feet) (3.6 meters [12 feet] at Montana City) could be divided up in several ways depending on the local jurisdiction needs and to be consistent with adjoining pedestrian and/or bicycle facilities. The exact use of the space can be determined during final design at each crossing location. Alternative configurations could include:

- ▶ 1.8-meter (6-foot) sidewalk plus 1.8-meter (6-foot) on-street bike lane. The bike lane would be a 1.3-meter (4-foot) lane plus 0.7-meter (2-foot) gutter on each

side of the crossing. Depending on pavement type, the gutter and bike lane can be integrated to eliminate pavement joints.

- ▶ 3-meter (10-foot) pedestrian/bicycle pathway plus 0.7-meter (2-foot) gutter on each side of the crossing.
- ▶ 1.8-meter (6-foot) sidewalk on one side, 3.6-meter (12-foot) multi-use trail (two-way), barrier-separated from lanes on the other side of the bridge.
- ▶ Based on local plans, the entire pedestrian/bicycle envelope may be on one side of a bridge, and may result in less than 7.3 meters (24 feet) to accommodate the needed facilities.

In addition, a Broadway Underpass for pedestrian and bicycle use is included with both build alternatives. The recommended size and type of structure will be determined during final design. The structure will be sized to restrict vehicular traffic, but allow for adequate pedestrian and bicycle access. The Broadway pedestrian/bicycle underpass would include a trail that connects to the cul-de-sac on Broadway west of I-15. On the east side of I-15, the underpass would include a paved path connecting to 18th Street adjacent to the MDT facility. Local planning has indicated that the street network east of I-15 could be expanded with proposed development, so the future pedestrian/bicycle trail connections can be modified based on that planning.

The build alternatives include proposed improvements to widen Cedar Street to a 5-lane section between N. Montana Avenue and I-15 in order to meet future travel demand. The widening would include accommodations for a sidewalk on each side of Cedar Street. Cedar Street already has development on both sides of the corridor, which may not allow the inclusion of an on-street bike lane. There are several nearby parallel streets to the north and south of Cedar Street that might be designated as bicycle routes as an alternative to Cedar Street. On-street bike lanes could be considered during final design if it is deemed feasible within the constrained right-of-way.

The build alternatives include proposed improvements at the Capitol interchange, including pedestrian/bicycle accommodations. The local pedestrian and bicycle network does not serve the Capitol interchange well, and there is some concern with pedestrian and bicycle traffic needing to cross higher speed ramps at this interchange. The inclusion of the 7.3-meter (24-foot) envelope will not preclude any future improvements to the local pedestrian/bicycle network adjacent to the Capitol interchange. The provisions for any pedestrian/bicycle crossings of ramps are flexible and include additional signing, signalization, raised crossings, or underpasses beneath ramps.

With improvements made to minimize the “barrier effect” on the pedestrian and bicycle network created by I-15, substantial improvements should be made to the regional pathway network. Providing safe pedestrian and bicycle crossings in conjunction with the proposed interchange improvements will facilitate connections to both proposed and outlying regional destinations, thereby enhancing overall recreational opportunities in and around the greater Helena Area.

4.9 Freight/Truck Movement

Freight and truck movement through the corridor was frequently identified as a concern and was specifically addressed in the project goals (see Section 2.3.2). Project Goal 1 identifies the improvement of travel for trucks, and Project Goal 4 addresses users in all modes of travel. Project Goals 2 and 8, although not mode specific, address transportation improvements in general.

Mobility along the I-15 Corridor and at each of the existing interchanges will be improved with either of the build alternatives. New interchanges both north and south will provide improved access to businesses and other commercial destinations. Reducing congestion along I-15 and the provision of designated facilities for pedestrians and bicyclists will improve safety for all modes of travel, including freight and truck movements.

4.9.1 No-Action Alternative

Under the No-Action Alternative the Lincoln Road interchange would be reconstructed, resulting in improved safety and mobility at this location. Other than this improvement interchange LOS throughout the corridor would be near or at capacity resulting in poor traffic operations. Existing roadway deficiencies that create higher potential for truck crashes would not be fixed, and access to local markets would be more difficult.

4.9.2 Preferred Alternative

I-15 and US 12 are both on the National Highway System (NHS). Truck mobility on both routes in the study area is considered in all proposed improvements by this alternative. The proposed Capitol interchange improvements will improve the capacity and design accommodations for truck movements between the two NHS facilities, which should minimize delay for truck movements between the two facilities. In addition, new interchanges are proposed at Custer Avenue and South Helena in the Preferred Alternative. The Custer interchange would serve a major commercial area of Helena and is likely to be a major access location for trucks serving this destination. There is some concern that an interchange at Custer could make the segment of Custer Avenue between N. Montana Avenue and I-15 attractive

for truck use. However, the Cedar interchange and connection to North Main and Lyndale Avenue (US 12) is the official truck route, so additional signing and possibly local ordinances restricting trucks on Custer west of N. Montana Avenue may be necessary with the Preferred Alternative. According to plans obtained from the city of Helena planning department, future land uses that could be served by the South Helena interchange are forecasted to be primarily residential, but also would likely include commercial and industrial.

4.9.3 Alternative 2

I-15 and US 12 are both on the NHS. Truck mobility on both routes in the study area is considered in all proposed improvements by this alternative. The proposed Capitol interchange improvements will improve the capacity and design accommodations for truck movements between the two NHS facilities, which should minimize delay for truck movements between the two facilities. In addition, new interchanges are proposed at Forestvale Road and South Helena in Alternative 2. Potential future land uses that could be served by these interchanges are forecasted to be primarily residential, but may also include commercial and industrial. The Forestvale interchange would cause a minor increase in traffic volume on N. Montana Avenue, which would also include a minor increase in truck traffic associated with the increase in land use around the interchange.

4.10 Transportation Analysis Summary

The analysis provided in this chapter is summarized in Table 4-7.

Table 4-7
Summary of Transportation Consequences

| Factor | Alternatives | | |
|---|--------------|-----------|---------|
| | No-Action | Preferred | 2 |
| Compatibility with Transportation Plans (Section 4.2) | ● | ○ | ◐ |
| Change in I-15 Volumes from No-Action (Section 4.3) | 0% | +21% | +23% |
| Change in I-15 Interchange Utilization from No-Action (Section 4.3) | 0% | +37% | +26% |
| Change in Vehicle Miles of Travel from No-Action* (Section 4.3) | 0% | -4,000 | -2,000 |
| Change in Vehicle Hours of Travel from No-Action (Section 4.3) | 0% | -1.9% | -1.6% |
| Interchange/Intersection Operations (LOS) (Section 4.4.) | ● | ○ | ○ |
| I-15 and Ramp Operations (LOS) (Section 4.4) | ● | ○ | ○ |
| Change in Emergency Response Time from No-Action (Section 4.5) | ● (0%) | ◐ (-4%) | ○ (-6%) |

continued

Table 4-7 (continued)
Summary of Transportation Consequences

| Factor | Alternatives | | |
|--|--------------|-----------|---|
| | No-Action | Preferred | 2 |
| Roadway Connectivity and Access to Community Resources (Section 4.6) | ● | ○ | ◐ |
| Traffic Safety (Section 4.7) | ● | ○ | ○ |
| Pedestrian and Bicycle Facilities (Section 4.8) | ● | ○ | ◐ |
| Freight/Truck Movement (Section 4.9) | ● | ○ | ○ |

*VMT/day in modeled area

LEGEND: ● Worst ◐ Acceptable ○ Best

4.11 Alternative Transportation Solutions

Transportation problems are often addressed through the construction of new roadway facilities which can result in undesirable environmental impacts and influences to land use and growth patterns. For this project, particular attention was paid to considering alternative transportation solutions that would both meet purpose and need, and reduce impacts. These solutions can be categorized as multi-modal or travel demand reduction applications and typically result from coordinated efforts across many jurisdictions. This section presents how alternative transportation solutions were considered in the development of the EIS alternatives.

4.11.1 Multi-Modal Applications

Multi-modal options suggested and considered during the alternatives development process included transit improvements and pedestrian/bicycle facilities. Transit improvements were identified as a supporting element and were limited to bus transit only as opposed to a fixed guideway.

4.11.1.1 Bus Transit

Existing bus transit is limited to Helena Dial-A-Ride and the Downtown Trolley. Only the Dial-A-Ride provides service in the study area. The Helena Dial-A-Ride service is the primary dedicated form of public transportation available in Helena. Transit provisions consist of a scheduled fixed-route checkpoint service and an on-demand door-to-door service. Both services are popular with the limited portion of travelers that use them. Based on the limitations of the service, transit ridership in the Helena area is very low in comparison to overall travel demand.

Very little interest was expressed by the general public for expanding bus service as part of this project. Based on existing ridership and transit planning in the Helena area, potential transit improvements such as new routes or new park-and-rides would have minimal effect on I-15, connecting roadways and other key deficiencies cited in the project purpose and need. Transit was not considered appropriate for the I-15 Corridor as a primary alternative due to high costs and low demand. Therefore, this supporting element was not advanced as part of the EIS alternatives. However, it is recommended that bus transit should be an important mobility option for local and regional consideration. Transit plays an important role in overall transportation planning, particularly as the Helena area grows and becomes more urbanized.

Roadway improvements proposed with the build alternatives could facilitate future transit connections along or across I-15. Proposed pedestrian and bicycle improvements could also facilitate access to future bus stops or stations.

4.11.1.2 Pedestrian and Bicycle Facilities

Pedestrian and bicycle facility improvements were strongly supported during the public involvement process and are included as an integral part of the build alternatives. For each new or reconstructed interchange, a 3.6-meter (12-foot) pedestrian and bicycle envelope is included on each side of the cross street unless a separated facility already exists. This 3.6-meter (12-foot) envelope could be configured to provide a 1.8-meter (6-foot) sidewalk with 1.8-meter (6-foot) on-street bike lane or some other combination. In addition, a pedestrian and bicycle underpass of I-15 is included at Broadway as a supporting element for the build alternatives (see Section 2.8.4.2 for a description).

Pedestrian and bicycle facilities can play an integral role in multi-modal transportation. These facilities provide mobility choices and can provide improved access to transit systems. These facilities also support transportation demand strategies discussed in the next section.

4.11.2 Travel Demand Reduction Applications

Transportation Demand Management (TDM) strategies are designed to make the most efficient use of existing transportation facilities by reducing the “demand” placed on these facilities. Using strategies that promote alternative modes, increase vehicle occupancy, reduce travel distances and ease peak hour congestion, TDM efforts can extend the useful life of transportation facilities and enhance mobility options.

The implementation of TDM strategies can support a number of different objectives:

- ▶ To enhance mobility options.
- ▶ To mitigate transportation impacts before, during and after construction of roadway improvements.
- ▶ To support the recommended improvements, ensuring that the improvements to the corridor achieve their maximum potential.
- ▶ To address travel needs and patterns not served by the recommended improvements.

TDM programs have been shown to make a tangible difference on travel demand and have the ability to influence the use of alternative modes. The regional influence of TDM applications is often difficult to trace, however many localized effects have been quantified and demonstrate desirable results. TDM programs have proven to be most effective when tailored to serve regional sub areas, distinct employment centers and unique residential areas. The success of TDM techniques is often linked to the level of participation by private employers and the willingness of individuals to change their travel behaviors. Orientation to multi-modal transportation facilities and services, related pedestrian amenities and information sources are important variables that will influence program strategies and ultimate travel choices.

TDM strategies have traditionally been most effective in more densely populated urban areas where there are distinct incentives or disincentives to modify travel behaviors. Influencing factors may include characteristics such as pervasive traffic congestion throughout extended peak periods, limited parking availability and high parking costs. Although TDM can help virtually any community, consideration should be given to what extent TDM strategies meet a community's established goals. Given those goals, TDM can be seen as a valuable component of a community's transportation investment or it can be viewed as more of a complimentary program.

In order to correlate TDM to community policies, three general objectives should be considered:

- ▶ **Reduce traffic and congestion.** TDM can be effective in reducing vehicular miles traveled, congestion at rush hour, and other measures of traffic. As future growth in population and employment occurs, TDM can aid in reducing the traffic impacts related to new growth.
- ▶ **Low-cost solutions.** If there is an urgent need to construct new infrastructure, but sufficient funding is unavailable, TDM may be an effective short-term solution. TDM programs are far less costly to implement than other transportation investments, such as widening roads or constructing new transit facilities.

- ▶ **Partnering with business.** TDM is unique in the transportation realm, as it gives employees a sense that their employer is assisting them with their commute. By forming partnerships between public agencies and private businesses to develop TDM programs, employees are provided with added benefits. Additionally, this can be very beneficial to employers who are interested in keeping employees satisfied and minimizing turnover. Partnerships can also be formed with schools, neighboring communities, and private transportation providers.

Although TDM concepts seem simple, careful planning is necessary to implement a successful program. Before determining which strategies are most appropriate, there should be a comprehensive assessment of community transportation issues. A community profile should then be used to determine the right environment for pursuing a TDM program and which applications are most suitable.

A common method of implementing TDM programs is through the establishment of a Transportation Management Association (TMA). The success of a TMA lies in the synergism of multiple organizations partnering together to address and accomplish more than any one entity (government agency, employer, developer, or resident) could achieve alone. Each participating group likely has an important influence on transportation and quality of life, and can make an important contribution to improving mobility and related consequences.

The geographic scope of a TMA varies with each organization. TMAs can offer region-wide services or serve specific areas such as central business districts, business parks, residential areas, transportation corridors or tourist venues. For example, in Missoula, Montana, public and private organizations set up a TMA focused on improving transportation options for workers coming in from surrounding communities. The TMA has expanded its services to address other work trips within and around Missoula.

TMA services can also vary by organization. Advocacy can range from working with a local transit provider to improve routing and services, to working with federal decision-makers on laws that can impact the commute. Other typical services include marketing of alternative transportation, promotional events at employment sites, carpool and vanpool formation, parking management, selling transit passes, promoting the use of bicycle facilities and more. A TMA can also help with identifying funding sources for TDM. Federal and State sources may include:

- ▶ Federal grants from the Federal Highway Administration, Federal Transit Administration, and Environmental Protection Agency.
- ▶ Surface Transportation Program funding, including "Congestion Mitigation/Air Quality" and "Enhancement" accounts.
- ▶ State grants from the Office of Energy Conservation.

- ▶ Partnerships with the private sector.

Travel demand options suggested during the alternatives development process included development of local TMAs; flextime work schedules; carpools; vanpools; and pedestrian and bicycle improvements. Pedestrian and bicycle improvements are included as important features of both build alternatives.

TDM can play an important role in regional transportation planning, particularly as areas such as the Helena Valley grow and become more urbanized. Within the valley there is currently minimal use of TDM programs and very little public support was expressed for these measures—other than for improved bicycle and pedestrian facilities—throughout the public involvement process. In addition, potential TDM improvements that were considered in the early stages of alternatives development and screening did not address the critical needs on I-15 or the connecting roadways. While MDT supports consideration of additional TDM measures within the community, implementation of these measures at this point in time are more appropriately led by local and regional governments and individual employers. Several TDM recommendations included in *the Greater Helena Area 2001 Transportation Development Plan Update* (see Sections 3.4.1 and 3.4.5) indicate that local initiatives may be gaining the political support necessary to become more viable in the future.

CHAPTER 5.0: ENVIRONMENTAL CONSEQUENCES AND MITIGATION

5.1 Introduction

This chapter describes the potential direct, indirect and cumulative environmental impacts that could occur as a result of implementation of either the No-Action Alternative, the Preferred Alternative (Alternative 1), or Alternative 2. Mitigation measures are identified for the build alternatives. Mitigation for Alternative 2 is the same as the Preferred Alternative unless otherwise indicated. Direct impacts are those that would result immediately from the implementation of a transportation improvement. Indirect impacts are caused by the action but occur later in time or are farther removed in distance, but still reasonably foreseeable.

For the FEIS, this chapter is organized by alternative; the No-Action Alternative, the Preferred Alternative, and Alternative 2. The Preferred Alternative and Alternative 2, as described in Sections 2.8.2 and 2.8.3, respectively, include new interchanges located north of Cedar and at South Helena, reconstruction of the Capitol interchange, safety improvements at the Lincoln Road and Montana City interchanges, extension of the west side Frontage Road, a pedestrian/bicycle underpass at Broadway, and Cedar Street widening between N. Montana Avenue and I-15. The main differences between the two are the location of the northern interchange (Preferred Alternative—Custer, Alternative 2—Forestvale) and the number and length of the auxiliary lanes. Impacts to resources are discussed under each alternative. Any impacts related to a supporting element and improvements common to both build alternatives are discussed under the Preferred Alternative.

The mitigation sections include mitigation measures that are appropriate, reasonable and feasible for implementation by and that are the responsibility of MDT due to impacts caused by the construction of a build alternative. Also listed are mitigation measures that could be implemented by others, in particular land use planning boards, to mitigate indirect and cumulative impacts related primarily to growth that fall under other agency jurisdictions. This EIS fully discloses all impacts and mitigation measures regardless of responsible party, and per CEQ, FHWA and EPA guidelines. It is intended that this document be used by all agencies with jurisdiction in the study area to assess and mitigate for direct, indirect and cumulative impacts related to the construction of improvements identified with the build alternatives.

5.1.1 Approach to Indirect Impact Assessment

Indirect impacts have been identified in a qualitative manner for most of the resources assessed for the study area due to the nature of the available data. A few resources have been assessed quantitatively as more defined data was available.

Indirect impacts for the project are assumed to be primarily associated with the anticipated shift in location of future development that could occur as a result of a new interchange or improved highway access condition. One assumption for this project is that population growth and new development are not going to occur solely due to the proposed transportation improvements. Identification of the potential nature and location of the shift in future development was estimated by the Land Use Advisory Group described in Section 3.2.2.3, in conjunction with the Lewis & Clark County and city of Helena growth plans, transportation comprehensive plans, and U.S. Census Bureau projections for the year 2025. The Land Use Advisory Group included individuals from professional affiliations and the outcome of their workshops represents a “best guess” effort to identify what the future of the Helena Valley could look like with a new northern and/or southern interchange in mind.

According to the study *Guidance for Estimating the Indirect Effects of Proposed Transportation Projects* (Transportation Research Board, NCHRP Report 403, 1998), supportive development that is likely to occur near new interchanges includes gas stations, rest stops, motels, fast food establishments, etc. They would typically be located in close proximity to the interchange. However, future population growth and related development in any location is dependent on a number of variables that will shape the look, density, timing, and viability of that development. Some of these factors include the strength of the general economy, interest rates, the price of gas, the availability and price of building supplies, new industry or services, availability of housing, and personal preferences. Transportation improvements are also a factor that could influence the location and timing of future development depending on where and when improvements are constructed. The appearance and density of any future development is not very easily determined based on the planning scale of this assessment and availability of future development plans. Since most future assumptions are based on a 2025 design year, many variables will change from year to year that would individually or collectively influence a different set of circumstances. Local planning boards, zoning and/or architectural ordinances, and water and infrastructure availability are some tangible methods to shape and control the future development and are the responsibility of the local planning jurisdictions.

As discussed in Chapter 1.0, the purposes for this project are to address safety, connectivity, and mobility issues along the I-15 Corridor as well as meet community needs. The project is not intended to induce growth, but this study recognizes that growth, at least in certain areas, might be a likely consequence.

5.2 No-Action Alternative

The No-Action Alternative would have no direct or indirect impacts to the following resources:

- ▶ Prime or Unique Farmland, Farmland of Statewide Importance, or Farmland of Local Importance
- ▶ Right-of-way
- ▶ Wild and scenic rivers
- ▶ Cultural resources
- ▶ Hazardous waste
- ▶ Visual conditions

Land Use Impacts

Under the No-Action Alternative, direct impacts are related to predicted residential and employment growth. The greatest proportion of new households, approximately 46%, would be located north of Custer Avenue. The Land Use Advisory Group projected that most of the new households would be located within 3 to 4 kilometers (1.8 to 2.5 miles) of I-15 because of its importance for north-south access in the Helena Valley.

Future employment growth would be concentrated between Custer Avenue and South Helena, located approximately 2.4 kilometers (1.5 miles) south of the Capitol interchange and approximately 1.6 kilometers (1 mile) north of the Lewis & Clark/ Jefferson County line. Over 50% of the future retail employment and over 75% of the future non-retail employment would be located in this segment of the Helena Valley. Most of the new retail employment would be focused near the existing interchanges and along major east-west roadways serving the Helena Valley. The largest concentration of non-retail employment growth would be located east of Helena along I-15 between the Helena Regional Airport and South Helena.

The projected distribution of future population and employment growth by the Land Use Advisory Group is generally consistent with the description of future land use in the Helena Valley in the city of Helena, Lewis & Clark County, and Jefferson County comprehensive plans. Information on the future land use and development contained in these plans is discussed in Section 3.2.2.2.

Safety, capacity, connectivity and mobility conditions under the No-Action Alternative would remain the same or worsen over the next 20 years given population and employment forecasts. Since current conditions are inadequate to address existing as well as future growth needs in the I-15 Corridor, the No-Action Alternative is not responsive to community planning efforts, does not improve access to and from I-15 or across I-15, and does not meet the purpose and need for the project.

No existing or planned land uses would be directly displaced by the No-Action Alternative and there would be little or no difference in the compatibility with

existing land use plans. The No-Action Alternative would not facilitate any changes to the existing land uses and zoning designations throughout the study area.

Seismic

The No-Action Alternative will replace the Lincoln interchange structure in the I-15 Corridor, but leaves other old structures vulnerable to damage or destruction by an earthquake.

Social

The No-Action Alternative would not change population growth trends or development patterns within the study area. Demand for community facilities, services, and housing would continue to increase in response to the projected population growth. The location of facilities would generally follow development and land use plans already identified by the counties and cities. With the anticipated growth throughout the Helena Valley and no improvement in access to commercial, employment, housing, community facilities and recreation areas, this could become a more critical issue. As congestion continues to increase, emergency vehicle response time would also increase.

Under the No-Action Alternative, east-west movement across I-15 would not be improved. As population increases in the Helena Valley and future traffic volumes increase, it would be increasingly difficult for pedestrians, bicyclists, commuter, truck and delivery traffic, and emergency response vehicles to cross the highway. The increased traffic congestion in the corridor could result in more cut-through traffic volumes in some neighborhoods, as commuters attempting to avoid congestion seek alternate routes using local streets. In addition, local traffic would continue to find it difficult to easily cross I-15, thereby potentially restricting economic patronage to certain businesses.

The No-Action Alternative does not address safety and operating deficiencies at existing I-15 interchanges and crossings; therefore, the deficiencies related to congestion, and safety and crash issues would likely worsen with increasing population growth in the Helena Valley.

Environmental Justice

As a result of the No-Action Alternative, there would be no disproportionate impacts to minority and/or low-income populations. The No-Action Alternative would result in no property acquisitions and no household relocations. Likewise, the No-Action Alternative would not benefit minority and low-income households with the enhancements proposed by the build alternatives such as improvements to safety, access, connectivity, congestion, and increased efficiency of emergency vehicle response times. However, all populations would be treated equally in this regard.

The indirect impact of the No-Action Alternative on the housing values for low-income and minority households is difficult to assess. If the current growth and development of the Helena area continues as projected, it is likely that housing and property values under the No-Action Alternative could increase; however, in contrast, traffic congestion levels would increase ultimately hindering accessibility to employment and housing. No new or additional employment opportunities for low-income or minority households are expected to result from the implementation of the No-Action Alternative.

Economic

The No-Action Alternative would not change economic growth trends or community development patterns in the study area. However, since the No-Action Alternative does not solve existing or future safety and operating deficiencies at existing I-15 interchanges and crossing, travel in the study area would become more time-consuming and frustrating for travelers as traffic volumes increase. During the most congested periods, travelers may avoid certain areas and choose other destinations. Businesses located in these areas may experience a decrease in business.

The No-Action Alternative does not address all of the safety problems in the study area. The 2003-2005 STIP includes interchange improvements at Lincoln Road, ramp revisions at the Capitol interchange, and a new pedestrian tunnel at the I-15/Capitol interchange area. Access to commercial areas and employment locations would not be improved.

Air Quality

The No-Action Alternative has the highest predicted levels of congestion at four different interchanges (Lincoln Road, Cedar Street, Capitol and Montana City). This alternative would therefore have the highest emissions of CO and HC anticipated in the year 2025.

The No-Action Alternative is predicted to have relatively high levels of VHT (due to increased congestion) and moderate VMT, so higher emissions of CO and HC would be expected.

Indirect air quality impacts that may result from changes in the pattern of land use, population density, or growth rate associated with the No-Action Alternative include:

- ▶ Increased emissions from natural gas space and hot water heating systems installed in new residential, commercial, recreational, and industrial facilities.
- ▶ Increased emissions from new commercial and industrial facilities that provide increased employment in the region.
- ▶ Increased emissions from electric generating systems needed to serve the projected growth.

- ▶ Increased emissions from new home heating fireplaces and outdoor barbecue appliances.
- ▶ Increased emissions from additional lawn mower usage.
- ▶ Increased emissions from manufacturing processes, such as those making Portland cement.

Noise

As traffic volumes continue to grow over time, noise levels would increase accordingly. **Table 5-2** (on page 5-23) and **Table 5-4** (on page 5-67) shows that the majority of receptors impacted by the build alternatives would also experience noise levels in excess of the FHWA NAC under the No-Action Alternative. The No-Action Alternative also has equivalent or greater forecasted volumes than the Preferred Alternative at three receptors and at four receptors than Alternative 2 along I-15, from the Cedar Street interchange to the Capitol interchange. This is primarily due to the concentration of traffic volumes continuing to utilize the Cedar and Capitol interchanges, since alternative routes and access points are not provided.

Water Resources and Water Quality

The No-Action Alternative would result in no new direct impacts to surface water or groundwater resources within the study area. The water segments within the study area including surrounding floodplain areas would not be altered, nor would they experience any added physical encroachment from the existing I-15 alignment.

The No-Action Alternative would result in no new direct impacts to water quality. Unchecked sand deposition over the edge of the roadway and into nearby waters would continue as part of winter and road maintenance practices. Unrestricted highway runoff would continue to occur and would most likely increase with growth in traffic volume.

Indirect impacts could result over time, as traffic and roadway related pollutants increase. The indirect impact of continuing growth and development in the study area would occur over the next 20 years and beyond. This development would increase the amount of impervious surface area of the surrounding areas, changing runoff characteristics, potentially degrading water quality for surface and groundwater resources, and inhibiting groundwater recharge rates. The No-Action Alternative provides no improvements, protection measures, nor BMPs to reduce existing direct or indirect water resource and quality impacts. As a result, the runoff containing sediment would continue to flow into the water resources within the study area, increasing sediment loads, turbidity, and potentially increasing pollutant loads above existing levels.

Wetlands

No wetlands would be directly impacted by this alternative.

With the No-Action Alternative, growth in the Helena area would continue, as would indirect impacts to wetlands. The Land Use Advisory Group projected that, with the No-Action Alternative, about 46% of new households in the Helena area would be located north of Custer Avenue within 3 to 4 kilometers (1.8 to 2.5 miles) of I-15. Future employment growth would be concentrated along major roads and intersections between Custer Avenue and South Helena. Wetlands, all of which have been disturbed, were preliminarily mapped in this general area from aerial photographs as part of the 1999 Helena Valley wetland mapping. Based on this mapping effort, the majority of wetlands in the Helena Valley appear to be associated with Lake Helena, over 2.5 kilometers (1.5 miles) east of the I-15 corridor, and Prickly Pear Creek. Therefore, substantive indirect impacts to wetlands are not expected to result with the No-Action Alternative.

Vegetation, Wildlife, and Aquatic Resource

With the No-Action Alternative, wildlife habitat within the existing I-15 right-of-way would remain unchanged. Habitat on private lands adjacent to I-15 that might be impacted under the build alternatives would be left unchanged, unless developed by landowners for other uses. All of the aquatic resources including Tenmile Creek, Silver Creek, and all irrigation canals, would remain unchanged and unaltered. No substantive direct impacts are anticipated.

With the No-Action Alternative, growth in the Helena area would continue, as would indirect impacts to vegetation and wildlife associated with displacement. Future employment growth is estimated to be concentrated along major roads and intersections between Custer Avenue and South Helena, generally considered urbanized and poor quality wildlife habitat.

Other than at Lake Helena, which contains a great blue heron (*Ardea herodias*) rookery and a bald eagle nest, no MNHP-listed plant or animal species of concern are known to occur in this portion of the study area. Substantive indirect impacts to such species are not expected.

Indirect impacts to aquatic resources would be associated with stormwater runoff, pollutants, etc. Although impacts cannot be quantified, the No-Action Alternative is not expected to result in substantive indirect impacts to aquatic resources due to development review and permitting requirements.

Floodplain

The No-Action Alternative would result in no new encroachment on the 100-year floodplain, and therefore has no direct or indirect impacts. However, growth in the Helena area would continue, as would potential indirect impacts to floodplain resulting from such growth. This would be regulated by floodplain policy.

Threatened or Endangered Species

With the No-Action Alternative, wildlife habitat within the existing interstate right-of-way would remain unchanged. Habitat on private lands adjacent to the interstate that might be impacted under a build alternative would be left unchanged, unless developed by landowners for other uses. Implementation of this alternative would not directly affect listed, proposed, or candidate threatened or endangered species or habitat.

With the No-Action Alternative, growth in the Helena area would continue, as would indirect impacts to vegetation and wildlife. Future employment growth is estimated to be concentrated along major roads and intersections between Custer Avenue and South Helena, generally considered urbanized and poor quality wildlife habitat.

With the exception of the bald eagle nest adjacent to Lake Helena approximately 4 kilometers (2.4 miles) east of the Lincoln Road interchange and occasional bald eagle use along Tenmile Creek and ditches and canals in the north valley, no listed or proposed threatened or endangered species are known to occur in this portion of the study area.

Substantive indirect impacts to threatened or endangered species are not expected.

Parks and Recreation

No direct impacts to parks and recreation resources in the study area would occur as a result of the No-Action Alternative.

This alternative may result in the indirect impact of reduced accessibility as traffic congestion increases in the study area. Drivers may find it more difficult to reach their park and recreation destinations. Access to parks and recreation resources by pedestrians and bicyclists would still be difficult on roadways crossing I-15 other than in those locations proposed in the *Parks Plan* and approved by the counties and/or city.

Construction

The No-Action Alternative involves no additional construction over what is currently programmed, approved, and funded by MDT, cities and counties. Therefore, the No-Action Alternative would result in no direct or indirect construction impacts.

Relationship Between Short-term Uses of the Environment and the Maintenance and Enhancement of Long-term Productivity

The No-Action Alternative would not require any local or short-term uses of the environment, nor would it result in any enhancement of long-term productivity. Traffic mobility, access, and motorist safety would continue to decline.

Irreversible and Irretrievable Commitment of Resources

With the No-Action Alternative, commitments of resources for maintenance and repairs would continue and would likely increase as infrastructure ages and traffic increases.

5.3 Preferred Alternative

5.3.1 Land Use

5.3.1.1 Impacts

The Preferred Alternative is not expected to have any direct impacts to zoning; in other words, it should not cause a change to current zoning and is compatible with the city and counties growth plans. Indirect impacts may occur in the form of shifts in the location of the projected land use growth. This would not result in any new net growth in the Helena Valley, simply a redistribution of the currently projected growth.

While, the Land Use Advisory Group did not evaluate the impact of constructing two new interchanges north and south of the Capitol interchange at the same time, it can be expected that the opening of two interchanges (north and south of the Capitol interchange) would result in a more balanced distribution of future land use development similar to the No-Action land use scenario. It is likely that some of the new development that is projected to occur between Custer Avenue and South Helena under the No-Action Alternative would be shifted north of Custer Avenue and south of South Helena.

When considering the combination of one northern plus one southern interchange, the Project Team evaluated the land use forecasts developed by the Land Use Advisory Group. In the No-Action scenario, the group allocated growth throughout the I-15 Corridor, but still in locations near the proposed interchanges, apparently since there is still developable land or for reasons besides a transportation improvement that these areas would still be developed. The Land Use Advisory Group certainly reflected the likely concentration of land use growth with either a northern or a southern interchange. The Project Team determined that the No-Action land use scenario reflected a reasonable distribution of land use growth if there were a combination of northern and southern interchange improvements.

The effect of increasing land use around an interchange was tested, with results shown on **Figure 3-6**. This sensitivity test shows that the majority of transportation demand at any location, as much as 90% of the demand, is due to the land use associated with the No-Action Alternative, rather than a transportation improvement.

The proposed improvements at Montana City and Lincoln Road, the pedestrian/bicycle underpass at Broadway, and the widening of Cedar Street will not impact land use in the study area.

South Helena Interchange

Land that is currently undeveloped near the South Helena interchange would have a greater likelihood of being developed and the timing of development could be accelerated under the Preferred Alternative. Supportive development near the proposed South Helena interchange could occur soon after completion of the interchange and would change the current rural character that exists in that area today. Supportive development is considered to be gas stations, rest stops, motels, fast food establishments, etc., located in close proximity to an interchange. Other development that could occur in the area, as an indirect impact, includes commercial and residential development. Commercial development may consist of retail businesses, offices, and service-related businesses. Residential development may consist of single-family residences of various densities. The commercial and residential development would most likely occur later in time and upon approval of the appropriate jurisdiction.

However, the South Helena interchange area is located within a designated Urban Area in the *Lewis & Clark County Comprehensive Draft Plan*. Urban Areas are designated areas for future growth and investment in capital facilities within the 20-year planning horizon. In addition, the area extending west of I-15 at the South Helena interchange location and along the county line is zoned as an open space - residential district by the city of Helena. The east side is currently not zoned by the city of Helena or Lewis & Clark County but conceptual development plans are under review by the city, however are not dependent upon completion of this proposed interchange. The areas on both sides of I-15 near the county line is zoned as residential by Jefferson County.

Capitol Interchange Improvements

The majority of reconstruction of the Capitol interchange would occur within existing right-of-way or land that has already been converted to a built use. Since there is minimal opportunity for new development to occur in the vicinity of the Capitol interchange, no direct or indirect land use impacts would occur with the proposed improvements. The land adjacent to the Capitol interchange is zoned as a general commercial district, public lands and institutions district or a commercial light-manufacturing district by the city of Helena. Improvements are not expected to impact current zoning designations.

Custer Interchange

Currently the land adjacent to the proposed Custer interchange [0.8 kilometer (0.5 mile)] is zoned by the city as either a general commercial district or a public lands and institutions district. The Helena Regional Airport is approximately 2 kilometers (1 mile) east of I-15 and adjacent to and south of Custer Avenue. Land that is currently undeveloped near Custer Avenue and the proposed interchange would have a greater likelihood of being developed in the near term with the Preferred Alternative. The commercial development that may occur in this area includes retail businesses, offices and service-related businesses. The public lands and institutions development that may occur in this area includes public and quasi-public institutional uses (zoos, museums, schools, etc.) and recreational public service activities (parks, playgrounds, preservation areas, etc.). This type of development is generally consistent with the current zoning and land use character near Custer Avenue and I-15 and the area is designated an Urban Area by Lewis & Clark County.

Based on current level of design, the I-15 auxiliary lanes would have no direct or indirect impact on land use.

West side Frontage Road

The west side Frontage Road construction would convert undeveloped open land to roadway use. Within Helena city limits, land adjacent to Colonial Drive is zoned as general commercial, residential-office, and public lands and institutions.

Commercial development along the west side Frontage Road may consist of retail businesses, offices, and service-related businesses. Residential development may consist of single-family residences of various densities. Outside of city limits, the connection of the I-15 Frontage Road to Colonial Drive may indirectly cause land use changes due to supportive development occurring adjacent to the new road. More development may occur in this area due to improved access between Montana City and southeast Helena and the availability of open land particularly in the area of the proposed South Helena interchange. Land in this area is zoned as an open-space-residential district by the city, and as residential and commercial by Jefferson County. The access provided by the west side Frontage Road could lead to continued development west of I-15 between Broadway and Montana City. Conceptual development plans for the east side of I-15 and south of US 12 are under review by the city of Helena and Lewis & Clark County.

5.3.1.2 Mitigation

No mitigation for direct or indirect land use impacts is required of MDT or FHWA.

Local jurisdictions with land use powers could mitigate for the indirect impacts. Mitigation measures that could be employed by local planning jurisdictions include:

- ▶ Control the location of development through the local planning process.
- ▶ Stipulate in zoning and land use plans that development occur in designated growth areas.
- ▶ Plan future local infrastructure needs to allow for development in areas where it is not currently planned.
- ▶ Coordinate between land use and transportation planners for more integrated approaches to land use, transportation, and environmental planning and review including smart growth strategies (see Sections 5.5.4 and 5.5.5).

5.3.2 Seismic Considerations

5.3.2.1 Impacts

Impacts to structures as a result of existing seismic conditions are related to the level of susceptibility to liquefaction within a particular area. Liquefaction can occur during an earthquake and is defined as a condition in which water-saturated soil temporarily loses strength and acts as a fluid.

There is slight potential for impacts as a result of existing seismic conditions to structures constructed as a direct result of the Preferred Alternative. The Montana City, South Helena and Capitol interchanges, and west side Frontage Road appear to be out of the area for susceptibility to liquefaction, but could still be influenced by an extreme seismic event and will be designed to withstand a seismic event. The Custer interchange and associated Custer Avenue widening and Cedar Street widening appear to be in an area with low susceptibility to liquefaction and should be investigated further during final design. The Lincoln Road interchange improvements appears to be in an area with a high susceptibility to liquefaction. None of the bridges in the I-15 Corridor span a known fault; however, the Lincoln Road interchange would be the closest to a known fault and must be carefully examined during final design.

Indirect impacts from seismic events could be experienced by any supportive or redistributed future development caused by the project.

5.3.2.2 Mitigation

To mitigate seismic impacts to structures under MDT's jurisdiction, all transportation structures constructed, as part of the Preferred Alternative, will be designed in accordance with AASHTO Seismic Performance Category B.

To mitigate seismic impacts to structures under other agency jurisdiction, the following guidelines could be followed by local planning agencies for any new structures constructed along the I-15 Corridor:

- ▶ Code changes due to findings from the HAZUS analysis should be incorporated into the design criteria for all construction, highway or otherwise, in the study area.
- ▶ All buildings along the corridor should be designed according to current and future city and county codes, including Uniform Building Code (UBC) Seismic Zone 3 design criteria.
- ▶ Special consideration should be given to the foundation design of any structures located in areas with a susceptibility to liquefaction.

5.3.3 Farmland

5.3.3.1 Impacts

Impacts to farmland as defined by the Farmland Protection Policy Act of 1981 occur whenever the land that can be classified as Prime, Unique, Statewide or Locally Important Farmland due to soil type is paved with impervious surface, covered by fill or removed by cutting to accommodate the installation of the proposed improvements. Also, land designated for development and purchased for highway right-of-way can preclude the use of the area for agricultural purposes although it may be physically left untouched.

The Preferred Alternative would directly impact a total of approximately 16 hectares (40 acres) of Farmland of Statewide Importance, and Farmland of Local Importance located near the South Helena interchange, the west side Frontage Road and the Lincoln Road interchange. The Preferred Alternative would not directly impact Prime or Unique Farmland.

If conversion of farmland occurs in the study area because of new residential or commercial development, the Preferred Alternative has the potential to indirectly impact Farmland of Prime, Statewide Importance, and/or Local Importance.

5.3.3.2 Mitigation

To determine if any mitigation measures would be necessary for the identified direct impacts to farmland, Form AD-1006: Farmland Conversion Impact Rating was submitted to and approved by the Natural Resources Conservation Service (NRCS). Copies of the coordination letters and this form are included in Volume 2, Appendix B.

Because the score was less than 160 points on Form AD-1006, no mitigation is required of MDT by the NRCS for farmland impacts for the Preferred Alternative.

MDT is not required to mitigate for indirect impacts to farmland. However, local planning boards could implement measures to limit the conversion of farmland to development, such as through zoning designations or purchasing open space.

5.3.4 Social

5.3.4.1 Impacts

There would be no direct impacts to social conditions, social interaction or community cohesion in the study area under the Preferred Alternative. The Preferred Alternative would not change the population growth or demographic trends projected for the study area. The improvements with the Preferred Alternative would be made within or adjacent to existing highway or roadway right-of-way and, therefore, would not disrupt or separate any neighborhoods in the study area. The Preferred Alternative would provide relief from congestion, improve safety and crash issues, provide safe crossing facilities for pedestrians and bicyclists, and improve emergency access and response time throughout the study area (see Chapter 4.0).

The areas around the proposed South Helena and Custer interchanges are designated as Urban Areas. They are adjacent to city limits and are expected to see development in the near term with extension of city services likely. Portions of the areas are already zoned. The single residence located north and west of the proposed Custer interchange may eventually relocate as future supportive development occurs in this area.

Indirectly, the Preferred Alternative may cause a shift in the patterns of future development, thereby causing a shift in where future community facilities may be located (see Section 3.2.2.2). The increased access and mobility provided by the transportation improvements would reduce cut-through traffic volumes. The Preferred Alternative would provide safer, more efficient and convenient travel for groups and individuals traveling to schools, recreation areas, churches, businesses, police, fire protection, hospitals and social activities. Connectivity between central and southern neighborhoods and current and future community facilities would be improved and include a more balanced growth scenario for the central and southern areas adjacent to the study area. For example, future community facilities may choose to locate in the central and southern portion of the study area.

The addition of a Broadway Underpass for pedestrian and bicycle access would provide safer and more convenient conditions for local residents who walk or bicycle. The ability to walk or bike to work, to shops or for recreational purposes would be greatly enhanced. The Broadway Underpass also provides an additional safe crossing of I-15 for pedestrians and bicyclists. The sidewalk additions as part of the Cedar Street widening would further improve the safety and access of pedestrian and

bicycle transit to and from businesses along Cedar Street, where currently, these alternate mode amenities are lacking.

The Preferred Alternative would have short-term impacts to access to community facilities near the proposed construction locations. Access could be temporarily restricted during construction, resulting in delays or increased travel times. Emergency access would be maintained during construction.

5.3.4.2 Mitigation

Since there are no direct or indirect impacts to social conditions, there is no mitigation required of MDT.

Short-term temporary impacts will occur during construction (see Section 5.3.20). During construction, good communication will be maintained with the communities and residents regarding road delays, access, and special construction activities. Radio and public announcements, newspaper notices, and on-site signage may be used.

5.3.5 Environmental Justice

5.3.5.1 Impacts

Potential impacts associated with the Preferred Alternative are assessed in terms of their relationship to property acquisitions or relocations, changes in access to employment areas, changes in low-income and minority communities/neighborhoods based upon changes in the physical environment such as increases in noise levels, air pollution levels, and the presence or introduction of hazardous materials. These impacts can result from the acquisition of properties needed to construct improvements, the displacement of low-income and minority households based upon property acquisitions, or a change in low-income and minority neighborhoods based upon the placement of facilities or improvements.

No potential impacts have been identified that would disproportionately impact low-income or minority populations. Changes in access to employment areas would be improved with the Preferred Alternative. It is not anticipated that impacts to low-income and/or minority households would occur due to changes in the physical environment (such as increased noise or pollution levels), or through the introduction or handling of hazardous materials. The Preferred Alternative would not result in any residential or business acquisitions or relocations. There would be no adverse impacts to these populations associated with congestion or air quality.

The largest concentrations of minority persons within the study area reside south of Cedar Street between N. Montana Avenue and I-15. None of the residences front Cedar Street; therefore, there would be no direct impacts in the form of property

acquisitions or relocations. Cedar Street is primarily a commercial-use strip where improvements to access would directly improve travel conditions to and from the employment and shopping centers for low-income and minority populations in the area. The sidewalk additions would further improve the safety and access of pedestrian and bicycle transit to and from businesses along Cedar Street, where currently, these alternate mode amenities are lacking. The indirect benefits of widening the existing Cedar Street to a five-lane section would result in increased mobility, efficiency, and connectivity between N. Montana Avenue and I-15.

Direct benefits associated with the transportation improvements of the Preferred Alternative would include increased safety, access, mobility (including pedestrians and bicyclists), and increased efficiency of emergency vehicle response times. The Preferred Alternative would provide safer, more efficient, and more convenient travel for low-income and minority groups who live and work in the Helena area. Connectivity between the central and southern neighborhoods, and east-west connectivity across I-15 would be improved, thereby improving access and lessening congestion for the community, as well as the low-income and minority populations in the area.

Though difficult to assess, many benefits associated with the Preferred Alternative could potentially have a positive impact on the property values of low-income and/or minority communities. The implementation of improved access and enhanced safety could indirectly improve property values. Conversely, this could result in an increase in growth to these neighborhoods and cause higher rents and property taxes for low-income persons.

Short-term construction-related impacts could include construction-related noise and access restrictions near the proposed construction locations, resulting in delays or increased travel times. Emergency access would be maintained at all times.

5.3.5.2 Mitigation

No direct or indirect impacts have been identified that would adversely and disproportionately affect low-income or minority populations. Therefore, no mitigation is required for Environmental Justice of MDT.

5.3.6 Right-of-Way and Utilities

5.3.6.1 Impacts

At this early stage of design, it is difficult to exactly determine the amount of right-of-way acquisitions that will be required to construct the Preferred Alternative. The Preferred Alternative has been designed to avoid impacting properties, particularly actual residence or business structures. It appears at this early stage of conceptual

design that there are no residential or business acquisitions or relocations required for any of the improvements under the Preferred Alternative. However, some parcels, approximately 80, may require land acquisition of all or a portion for right-of-way, but no structures are impacted. This information is conceptual and would be refined during final design when more detailed right-of-way information is available.

Utility relocations and easements may be required. Utility relocations and easements may include relocating or establishing new power lines, telephone lines, fiber optic cable lines and underground gas lines. Coordination with the appropriate utility service provider will occur as necessary during final design.

Montana City Interchange Improvements

At this early stage of conceptual design, it does not appear that any right-of-way would need to be acquired as part of the interchange improvements.

South Helena Interchange

For the South Helena interchange, additional right-of-way from approximately two adjacent properties would be required to construct the diamond interchange and bridge over I-15 connecting to the west side Frontage Road.

West side Frontage Road

The west side Frontage Road connection to Colonial Drive would require the acquisition of land from approximately two parcels. A substantial portion of the right-of-way for the west side Frontage Road in both Jefferson and Lewis & Clark Counties has been recently dedicated by landowners developing their properties. As of the writing of this document, the city of Helena was working to obtain dedication of the remainder of the right-of-way needed to complete this connection of the west side Frontage Road. Construction of the South Helena interchange will likely require an adjustment to the right-of-way for the Frontage Road.

Broadway Underpass for Pedestrian and Bicycle Use

Construction of an I-15 underpass at Broadway for pedestrian and bicycle use may impact approximately three parcels of land.

Capitol Interchange Improvements

The majority of reconstruction of the Capitol interchange would be contained within the existing right-of-way. Several full parcel takes would be required on the west side of I-15, but these parcels are currently undeveloped. The northwest quadrant of the interchange may require some partial land acquisition to allow room for reconstruction. The southwest quadrant of the interchange may require land from parcels north of 11th Avenue and south of Colonial Drive for the 11th Avenue widening as part of the new connection to Colonial Drive. The new typical section of 11th Avenue is proposed to include a consistent width sidewalk. Other impacts may

include relocation of landscaping and sidewalks. These improvements may impact approximately 35 parcels. MDT owns several parcels of land in the southeast quadrant of the intersection that may need to be partially converted to highway right-of-way.

Cedar Street Widening

Widening Cedar Street is expected to increase the roadway width to approximately 24 meters (80 feet) including sidewalks. This may result in minor right-of-way impacts in some locations on either side of the road.

Custer Interchange

Approximately 15 parcels located adjacent to I-15 could be affected by the construction of the Custer interchange, Custer Avenue widening and relocation of the east side Frontage Road. Two auxiliary lanes are required in each direction between Custer Avenue and the Capitol interchange (one constructed to the inside and one constructed to the outside). Based on conceptual design, approximately 15 parcels have been identified that may be partially impacted. This includes potential right-of-way or easement from the Montana Rail Link. Additional right-of-way or easements may be required southeast of Cedar Street for adjustments to interchange ramps. Final design will determine exact right-of-way impacts and if retaining walls can be constructed within MDT right-of-way so that additional right-of-way is not needed.

Lincoln Road Interchange Improvements

Improvements at the Lincoln Road interchange may require partial right-of-way acquisition of approximately 8 parcels.

5.3.6.2 Mitigation

The acquisition of land or improvements for highway construction is governed by state and federal laws and regulations designed to protect both the landowners and taxpaying public. Landowners affected are entitled to receive fair market value for any land or buildings acquired and any damages to remaining land due to the effects of highway construction. This project will be developed in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (P.L. 91-646 as amended), (42 U.S.C. 4601, et. seq.) and the Uniform Relocations Act Amendments of 1987 (P.L. 100-17).

5.3.7 Economic

5.3.7.1 Impacts

With the Preferred Alternative there would likely be no direct permanent impacts to economic conditions in the study area. This alternative would improve connectivity to centrally and southerly located development centers, thereby improving access to

current and future businesses. Due to improved access and mobility, this alternative would be expected to enhance the economic condition of the majority of the study area and would be consistent with economic growth areas identified in the city and counties comprehensive plans.

Indirectly, the Preferred Alternative could cause a shift in the development patterns of expected future growth altering where future retail and commercial enterprises decide to locate within the study area (see Section 3.2.2.2). The Preferred Alternative may induce future commercial enterprises to locate in the central and southern part of the study area rather than elsewhere in the Helena Valley.

Construction of the Preferred Alternative could temporarily boost the economy of the study area during the construction period by providing employment of construction workers and revenue generated by the purchase of construction material from local sources. Additional employment could provide a temporary economic boost to the region, through increased wages and retail sales to firms in the project vicinity, partially offsetting any lost revenue from temporary increases in congestion and access restrictions during construction.

Economic impacts as a result of construction would be temporary. Access to businesses located near construction sites may be temporarily impaired which could cause shoppers to go elsewhere particularly with the Cedar Street widening. Revising driveway accesses and parking for businesses could also temporarily hinder access to businesses on Cedar Street. Once construction is finished, there would be no direct impacts to long-term economic conditions in the study area. The growth in employment and business that the region is experiencing would be expected to continue. Signs and landscaping associated with businesses may be displaced or relocated. However, improved travel conditions could offset impacts resulting from loss of right-of-way.

5.3.7.2 Mitigation

Any signs or landscaping displaced by construction will be replaced as coordinated between MDT and the landowner. No mitigation of indirect impacts to economic conditions is required of MDT for the Preferred Alternative.

Local planning boards may implement other mitigation measures to control the location and amount of development that could occur as a result of the Preferred Alternative.

Mitigation measures identified for construction-related economic impacts include maintaining accurate and up-to-date construction information for business enterprises and the public via public announcements and/or electronic signing and keeping access as open as possible.

5.3.8 Air Quality

5.3.8.1 Impacts

Future levels of traffic congestion are a good indicator of likely changes in certain types of air pollutants. Increases in congestion generally result in increases in carbon monoxide (CO) and hydrocarbons (HC). Hydrocarbons are a precursor of ozone, which is a criteria pollutant.

Vehicle miles or hours of travel are also good indicators of future air quality. Increases in vehicle miles of travel (VMT) would likely result in increases of all mobile source pollutants [CO, PM₁₀, O₃, NO₂, and HC]. Increases in vehicle hours of travel (VHT) would typically result in increases of CO and HC.

The Preferred Alternative would result in a 13% increase of vehicle miles of travel (VMT) on the interstate, but a decrease of VMT on arterial and collector roads, when compared to the No-Action Alternative. The Preferred Alternative is estimated to reduce overall VMT in comparison to the No-Action Alternative by 0.2%. Increases in VMT will increase all mobile source pollutants, although in general, VMT on interstate facilities results in fewer PM₁₀ emissions than on arterial or collector roads.

Vehicle hours of travel are expected to decrease by 1.9%, which results in reduced CO and HC emissions. This minimal decrease will likely be offset by a more noticeable increase in VMT, which will increase all mobile source pollutants.

The Preferred Alternative may pose a greater risk in the future for urban air toxics, since there is a potential for new development in the vicinity of any of the new interchanges. The Preferred Alternative has very low levels of congestion and would thus be predicted to have lower levels of CO and HC than the No-Action Alternative.

The west side Frontage Road would slightly reduce vehicle miles of travel and PM₁₀ by reducing out-of-direction travel. Construction of a west side Frontage Road could indirectly increase development potential that could indirectly increase air pollution.

The I-15 auxiliary lanes are proposed to maintain LOS B on the interstate resulting in decreased congestion on I-15, which would decrease carbon monoxide emissions.

The Broadway underpass would not have any affect on level of service or vehicle miles traveled, so would therefore have no measurable direct effect on air quality. It would, however, provide support to pedestrians and bicyclists, so would tend to enhance these alternative modes of travel, which may indirectly benefit air quality.

The Cedar Street widening would result in increased vehicle miles of travel that would increase all mobile source pollutants.

No capacity improvements are proposed at the Montana City or Lincoln Road interchanges, only safety improvements, so no change in air pollution emissions is expected.

Indirect air quality impacts that may result from changes in the pattern of land use, population density, or growth rate associated with the Preferred Alternative include:

- ▶ Increased emissions from natural gas space and hot water heating systems installed in new residential, commercial, recreational, and industrial facilities.
- ▶ Increased emissions from new commercial and industrial facilities that provide increased employment in the region.
- ▶ Increased emissions from electric generating systems needed to serve the projected growth.
- ▶ Increased emissions from new home heating fireplaces and outdoor barbecue appliances.
- ▶ Increased emissions from additional lawn mower usage.
- ▶ Increased emissions from manufacturing processes, such as those making Portland cement.

5.3.8.2 Mitigation

There are no mitigation measures for the direct or indirect impacts to air quality required of MDT. Decreased road sanding during the winter and increased frequency of road sweeping could be considered for PM₁₀ generated along the widened Cedar Street by the jurisdiction with responsibility for maintenance along Cedar Street.

5.3.9 Noise

5.3.9.1 Impacts

Noise impacts for future conditions are determined based on land use and the magnitude of predicted traffic noise levels. Using FHWA and MDT guidelines, an impact occurs for residential properties if noise levels projected at the commonly used exterior part of the property (a ground-floor location) equal or exceed 66 decibels. An impact also occurs if there is a projected increase of 13 decibels or more.

Table 5-1 identifies the seven locations where noise monitoring occurred and their corresponding noise levels. These locations were chosen based on their proximity to

I-15 and their potential for receiving noise impacts. These levels were used to calibrate the model for the assessment of hundreds of noise receptors along I-15.

Table 5-1
Existing Noise Levels

| Monitored Site ID | NAC Activity Category | Location | Noise Level (Leq—dBA) | | |
|-------------------|-----------------------|--|-----------------------|---------|------------|
| | | | Monitored | Modeled | Difference |
| 1 | B | Washington/Livingston Intersection | 50 | 58 | + 8 |
| 2 | B | Hunters Pointe Retirement Center | 57 | 58 | + 1 |
| 3 | B | Residences along Frontage Road | 56 | 57 | + 1 |
| 4 | B | Near Forestvale/N. Montana Avenue Intersection | 45 | 50 | + 5 |
| 5 | B | Residence at Treasure State Acres | 62 | 64 | + 2 |
| 6 | C | Off Custer between N. Montana Avenue and I-15 | 65 | 67 | +2 |
| 7 | B | Trailer Park (North of RR/West of I-15) | 67 | 69 | + 2 |

For modeling purposes, 76 noise receptor locations were chosen, each representative of any other developments within close proximity. These representative noise receptors were modeled under existing and future conditions for the study area. Due to the size of the I-15 Corridor study area and the complexity of the project, a noise model was developed for both the Custer and Capitol interchange improvement locations. The Custer model also includes the Cedar interchange. No noise model was developed for the South Helena interchange or west side Frontage Road locations because of the lack of development in the area. The closest developments to the South Helena interchange lie over 427 meters (1,400 feet) away from any part of the proposed interchange alignment. These receptors would therefore receive no substantial increase in noise levels due to construction of an interchange at this location. No noise impacts are associated with the improvements at the Montana City, South Helena and Lincoln Road interchanges, west side Frontage Road, nor the Broadway Underpass for pedestrian and bicycle use.

Table 5-2 provides results for impacted receptors only from the existing and year 2025 noise model runs for the modeled receptors relating to the Preferred Alternative. Receptors SSW4, SSE4, NW5, and SW7 are not impacted. This table includes the applicable FHWA Noise Abatement Criteria (NAC) for each noise receptor.

A comparison was made between the future build modeled values and the applicable FHWA NAC to determine impacts.

Table 5-2
Preferred Alternative Existing and Future Noise Levels
at Impacted Receptors (Peak-Hour)

| Location | Noise Receptor ID | Existing Conditions Year 2000 Modeled (dBA-Leq) | No-Action Conditions Year 2025 (dBA-Leq) | Build Conditions Year 2025 (dBA-Leq) | Applicable FHWA NAC (dBA-Leq) |
|---------------|-------------------|---|--|--------------------------------------|-------------------------------|
| Custer Avenue | NNE1 | 65 | 69 | 69 | 66 |
| Cedar Street | SNW4 | 67 | 69 | 71 | 71 |
| Cedar Street | SSW4 | 70 | 72 | 74 | 71 |
| Cedar Street | SSW7 | 66 | 68 | 71 | 66 |
| Cedar Street | SSW9 | 67 | 69 | 72 | 66 |
| Cedar Street | SSW10 | 68 | 70 | 73 | 66 |
| Cedar Street | SSW11 | 67 | 70 | 72 | 66 |
| Cedar Street | SSW12 | 63 | 65 | 68 | 66 |
| Cedar Street | SSW13 | 68 | 70 | 73 | 66 |
| Cedar Street | SSW14 | 69 | 72 | 74 | 66 |
| Cedar Street | SSW15 | 64 | 67 | 69 | 66 |
| Cedar Street | SSW16 | 70 | 73 | 74 | 66 |
| Cedar Street | SSW17 | 64 | 67 | 68 | 66 |
| Cedar Street | SSW18 | 70 | 72 | 74 | 66 |
| Cedar Street | SSE4 | 68 | 70 | 72 | 71 |
| Capitol | NW5 | 65 | 74 | 72 | 71 |
| Capitol | NW6 | 63 | 69 | 66 | 66 |
| Capitol | NW8 | 66 | 69 | 68 | 66 |
| Capitol | NW9 | 69 | 70 | 70 | 66 |
| Capitol | SW3 | 67 | 70 | 71 | 66 |
| Capitol | SW7 | 68 | 73 | 71 | 71 |

The model results summarized in **Table 5-2** show the 21 receptors out of 76 that are projected to experience a noise impact due to implementation of the Preferred Alternative. Of the 21 receptors, 17 are projected to exceed the FHWA noise criteria in the No-Action Alternative as well. The three receptors not exceeding the FHWA NAC include SSW12, located in a development where adjacent receptors are anticipated to receive a noise impact. Therefore, this no impact condition is an anomaly in this situation. The other two receptors projected to exceed the FHWA noise criteria due to the Preferred Alternative, but not the No-Action Alternative, are receptors SNW4 and SSE4. These two receptors are commercial developments, SNW4 located along Cedar Street west of I-15 and SSE4 located just east of I-15, south of Cedar Street/I-15 interchange.

West Side Frontage Road

The alignment of the west side Frontage Road will be shifted away from homes along the Frontage Road and aligned closer to I-15. Construction of a west side Frontage Road could indirectly increase development potential that could indirectly increase noise levels. However, I-15 will continue to be the predominant noise source due to the number of trucks on I-15, the speed of vehicles traveling on I-15, and the volume of traffic (greater than the Frontage Road) on I-15.

Capitol Interchange Improvements

As shown in **Table 5-2**, four representative receptor locations in the Capitol noise model are projected to receive noise impacts under the Year 2025 build scenario. **Figure 5-1** illustrates the general locations of these receptors.

Receptors NW6, NW8, and NW9, all Category B land uses (motels), are all projected to receive noise levels in excess of the FHWA noise criteria by either the Preferred Alternative or the No-Action Alternative. These three locations are projected to experience equivalent or greater noise levels under the No-Action Alternative. An increase in noise levels at these locations is generally attributable to an overall increase in traffic volume over time.

Receptor SW3 is a motel located southwest of the Capitol interchange. This receptor has existing and future noise levels that exceed the NAC for Category B land uses. The Preferred Alternative results in an increase in noise levels of 4.0 decibels to 71 dBA, only slightly greater than the No-Action Alternative.

Cedar Street Widening

The Cedar Street widening would result in an increase in traffic volumes and a shift in traffic closer to developments along the roadway. An increase in noise levels may occur as a result of this. The developments along Cedar Street from N. Montana Avenue to I-15 are generally commercial uses, including receptors SNW4 and SSW4, and fall under land use Category C.

Of the 15 receptor locations in the Custer/Cedar noise model projected to receive impacts under the Preferred Alternative, 14 of them are located along the Cedar Street/I-15 interchange. Noise increases at these locations would generally be associated with the proposed auxiliary lanes on I-15 and increases in future traffic volumes. **Figure 5-1** illustrates the general locations of the receptors. Receptors SSW7 and SSW9-SSW18, residential structures located to the southwest of the interchange, all experience noise impacts approaching or exceeding the FHWA NAC of 67 dBA for Category B land uses. Increases in noise levels at these receptors range from 4 to 5 decibels, resulting in noise levels of 68 to 74 dBA.

Custer Avenue Interchange

Table 5-2 shows that 15 receptor locations in the Custer/Cedar noise model are projected to receive impacts under the Preferred Alternative. Of these 15 receptors, only one, Receptor NNE1, is impacted along Custer Avenue. However, noise levels expected at Receptor NNE1 (Zone C on **Figure 5-1**) are projected to be 0.2 decibels greater under the No-Action Alternative. This is because under the No-Action Alternative, the east side Frontage Road remains in its existing alignment, in close proximity to Receptor NNE1. Under the Preferred Alternative, the east side Frontage Road is shifted away from this receptor, resulting in lower noise levels than the No-Action Alternative, but still greater than the FHWA NAC.

5.3.9.2 Noise Contours (2025)

Noise contours were developed to provide an overview of noise levels along the entire I-15 mainline rather than at specific points. At points along the mainline where there are interchanges or cross-streets, noise levels from these streets would not be accounted for in this particular model.

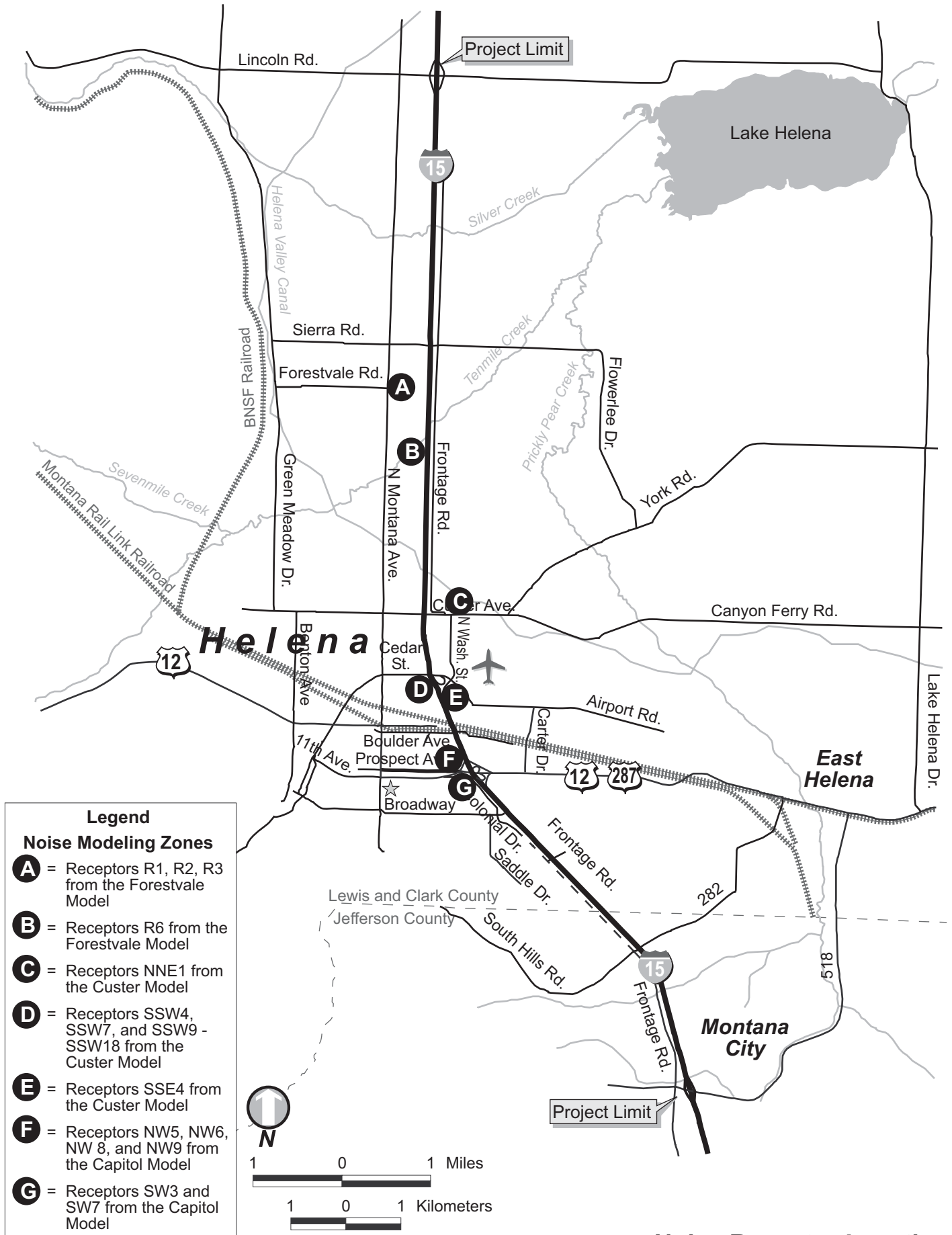
The No-Action Alternative and the Preferred Alternative both result in a shift of the noise contour lines farther away from I-15 due to the predicted increase in traffic volumes. The noise contour line for Category B land uses (66 dBA) shifts approximately 35 meters (115 feet) and 40 to 50 meters (132 to 164 feet) away from I-15 and closer to the receptors under the No-Action Alternative and Preferred Alternative, respectively.

Establishing the noise contours helps to identify the properties and land uses which are located within the impact lines. These contours can be utilized by planning agencies to discourage future development from occurring within the noise impact areas.

5.3.9.3 Mitigation

It is MDT's policy that no noise mitigation will be provided for impacts to Activity Category C (commercial, other non-residential developed lands) land uses. Therefore, mitigation for noise impacts to receptors SNW4, SSW4, SSE4, NW5 and SW7 will not be considered.

MDT only considers noise abatement where noise impacts affect areas with frequent human use. Lower noise levels resulting from noise mitigation must be shown to be of benefit to the impacted receptor(s). There are two main elements in the consideration of noise abatement: feasibility and reasonableness. Feasibility includes the engineering considerations involved with implementation of noise mitigation: 1) Can a noise barrier be constructed? 2) Can a substantial noise reduction



Noise Receptor Locations

Figure 5-1

of 6 decibels (insertion loss) be obtained with a noise barrier? 3) Are there other noise sources present? 4) Are there safety limitations or maintenance issues?

The reasonableness criterion is more subjective and implies the use of common sense and good judgment. Reasonableness considerations include the following: 1) Does the cost of a noise barrier exceed the MDT cost-effectiveness-index (CEI) standard? 2) Do future noise levels increase with or without implementation of the project? 3) Were impacted receptors in existence prior to the original construction or widening of I-15? 4) Would the noise barrier be in-use for at least 15 years? 5) Do the impacted residents want a noise barrier?

Further detail on mitigation recommendations can be found in the *Noise Analysis Technical Memorandum* prepared for this project (see Appendix D on how to obtain this report). The following information summarizes the conceptual recommendations that have resulted from the noise analysis. Noise mitigation will be further defined by MDT during the final design process.

- ▶ Mitigation would be provided for the residential mobile home park and neighboring residences located southwest of the Cedar Street/I-15 interchange receptors, SSW7 and SSW9-SSW18. Preliminary studies indicate a noise barrier may be a reasonable and feasible mitigation measure. This form of mitigation, though, is dependent upon those final roadway design decisions that affect the height and location of the noise barrier. Another form of mitigation is property acquisition to create a noise buffer. Both forms of mitigation will be reexamined according to the MDT noise policy during final design and the views of the impacted residents considered.
- ▶ Mitigation is not recommended for Receptor NNE1, the lone residence located to the north of Custer Avenue, east of I-15. A noise barrier along Custer Avenue, the primary noise source for this location, cannot be continuous due to the existing access to the property. A break in the wall would diminish its effectiveness. The construction of any noise barrier that would succeed in reducing noise levels by the required six decibels would exceed the MDT cost-effective index. Also, at the time of this documentation there were future plans to convert the use of this land from residential to commercial.
- ▶ Mitigation is not recommended for the receptors located within the vicinity of the Capitol interchange. Receptors NW5, NW6, NW8, and SW3 are all motels adjacent to the interchange. Generally, mitigation is not considered for motels because a noise barrier may negatively impact the motel's visibility from travelers on passing roadways. For this reason, no mitigation is proposed for any of these sites.
- ▶ The results of this noise study will be provided to all agencies with land planning responsibilities in the area.

Temporary noise impacts may occur during the construction phase for this project. The operation of heavy equipment (e.g., bulldozer) or use of power tools (e.g., jackhammer) in close proximity to the residences within the study area may create an undesirable noise condition. In an effort to limit construction noise impacts, noisy construction activities will be limited to certain hours of the day if possible. The city of Helena does not limit construction work to specific time periods of the day, but it is recommended that, whenever possible, these activities occur between 7:00 a.m. and 7:00 p.m.

5.3.10 Water Resources and Water Quality

5.3.10.1 Surface Water Impacts

Surface water resources within the study area consist of natural stream segments that comprise portions of the larger hydrologic ecosystem. Within the study area, the water resources that cross directly underneath the I-15 Corridor are Silver Creek and Tenmile Creek.

The improvements associated with the Preferred Alternative would not directly modify surface water resources within the study area, nor would they experience any added physical encroachment. Impacts to water resources and quality are directly related to the increase in impervious surface area of the additional roadway paved area and indirectly as a result of new development and wider roadways.

A total of approximately 14 hectares (35 acres) of additional impervious surface would be added, including auxiliary lanes. Ten hectares (25 acres) of additional impervious surface is associated with the construction of South Helena and Custer interchanges and improvements to Capitol interchange. The supporting elements will add the following amounts of impervious surface:

- ▶ Approximately 0.4 hectare (0.9 acre) of additional impervious surface (assuming a 814-meter [600-foot] length and 12- to 24-meter [40- to 80-foot] width design) would be added in association with the Montana City interchange improvements.
- ▶ The west side Frontage Road would add approximately 3 hectares (7.6 acres) of additional impervious surface assuming a 2.8-kilometer (1.8-mile) connection design.
- ▶ Approximately 0.2 hectare (0.6 acre) of additional impervious surface as a result of pedestrian/bicycle improvements in both directions at approximately 1.8 meters (6 feet) per lane would occur in association with the Broadway Underpass design. The Broadway Underpass site is in a unique location because of its proximity to an identified wetland area. Additional surface water runoff could be directed into a sediment catch basin/outfall and then naturally filtered through the adjacent wetlands.

- ▶ Approximately 0.1 hectare (0.2 acre) of additional impervious surface (assuming a design of an additional two lanes at approximately 7.3 meters [24 feet] per lane) would be added in association with the Cedar Street widening.
- ▶ Approximately 0.4 hectare (0.9 acre) of additional impervious surface (assuming a 304-meter [1,000-foot] length design) would be added in association with the Lincoln Road interchange improvements.

Indirect impacts would result in more rainwater running off of the adjacent land and being swept away by gutters and sewer systems, instead of filtering slowly into surface waters and/or recharging groundwater resources.

5.3.10.2 Groundwater Impacts

The groundwater impacts considered in this assessment include both groundwater availability and supply, as well as quality. No direct impacts to groundwater availability and supply are anticipated to occur with the Preferred Alternative.

The indirect impacts of the Preferred Alternative on groundwater availability and supply are related to future population growth and development and can be qualitatively addressed using existing state laws regarding water use. This section summarizes applicable portions of the Montana Water Law 2001-Title 85, Water Use Chapter 2 (Montana Code Annotated [MCA], 2001).

Montana water law would limit any impacts from new public or commercial supply wells drilled in the study area, due to the fact that any new wells which would pump at rates over 35 gallons per minute (GPM) and/or withdraw more than 10 acre-feet a year would be required to obtain a Beneficial Water Use Permit from the Department of Natural Resource Conservation (DNRC). To obtain a Beneficial Water Use Permit, the applicant must prove by a preponderance of evidence that the water is physically available, and that there would be no adverse affect on prior users (appropriators). Montana water law (Section 85-2-311, MCA) provides the laws that would prohibit a new water user (greater than 35 GPM and/or 10 acre-feet a year) from causing an adverse affect to prior water users, thus limiting indirect impacts. Existing water users can file objections if they feel the new appropriation would impact their water supply. However, the exception is in the case of individual wells withdrawing 35 GPM or less. Outside of controlled groundwater areas, the DNRC has no authority to deny a permit application for these smaller yield wells if the proper forms have been completed.

Some new water use could occur from individual wells withdrawing less than 35 GPM and less than 10 acre-feet a year. In the event that cumulative impacts of numerous individual wells (<35 GPM) reached a level adverse to other water users in the area, the area could be designated a "Controlled Groundwater Area", which would limit the

future growth of even small individual wells (less than 35 GPM and less than 10 acre-feet a year). In a Controlled Groundwater Area, even the smallest wells are required to obtain a Beneficial Water Use Permit, and comply with all the criteria of Section 85-2-311, MCA in order to obtain a Beneficial Water Use Permit.

Direct impacts on groundwater quality from the Preferred Alternative are related to stormwater discharge from both the construction and the operation of the proposed improvements. Indirect impacts on groundwater quality are primarily related to population growth estimates and the ensuing installation of individual and community wastewater treatment facilities. The maximum direct and indirect impacts of the Preferred Alternative on groundwater quality cannot exceed the Montana nondegradation standards as dictated by Montana law.

Stormwater discharges are generated by runoff from land and impervious surface areas such as paved streets, parking lots, driveways, and building rooftops during rainfall and snow events. They often contain sediment or pollutants in quantities that could adversely affect water quality. Currently, stormwater runoff from I-15 is either allowed to run off the outside edge of the roadway, or it is collected by retention/detention areas and redirected by cross culverts. Most of the impacts to water bodies are indirectly related to the increase in impervious surface area as a result of potential new development. Indirect impacts from the increase in imperviousness would result in more rainwater running off of the land and being swept away by gutters and sewer systems, instead of filtering slowly into surface waters or recharging groundwater resources. Undeveloped land has a valuable, natural filtering function, absorbing precipitation and slowly releasing it into the ground. Without this natural, recharging filtration system, much of the groundwater that the Helena community depends upon would be non-existent. It is important to note that increases in imperviousness and subsequent groundwater infiltration losses strongly correlate with a reduction in both surface water quality and the groundwater supply as a whole.

The primary potential for new development in an area to impact groundwater quality is from the discharge of septic effluent from sewage drainfields. The Montana Non-degradation law prohibits drainfield effluent from exceeding a level of 5 milligrams/liter (mg/l) nitrate at the end of the mixing zone (7.5 mg/l for level two treatment systems), and prohibits phosphorous to "break through" to the nearest surface water body within 50 years. Montana's Non-degradation law defines impacts that comply with the standards described above as "Non Significant". The Montana Non-degradation law is vigorously and effectively enforced by MDEQ. Therefore, any new development indirectly caused by the Preferred Alternative utilizing on-site sewage treatment systems and associated drainfields would have a "Non Significant" impact on water quality.

South Helena Interchange

Any future new development shifted to the South Helena interchange area would likely obtain water from new wells installed predominantly in fractured bedrock of the South Hills. As described in Section 3.11.4.4, the South Hills Bedrock typically draws water from fractured bedrock with well discharge typically ranging from 4 to 80 GPM. While not as prolific as the Helena Valley-Fill Aquifer, there is potential for siting new supply wells with adequate production in the South Helena interchange area.

The South Helena interchange is not expected to cause adverse impact to water availability or supply in the interchange area, and there appears to be potential to site new supply wells to serve new development.

Growth in the South Helena interchange area would likely be primarily served by on-site sewage treatment systems and associated drainfields unless the city of Helena expands their infrastructure. The two wells sampled during 1992 to 1998 by Joanne N. Thamke within the South Helena interchange area show nitrate levels far below the Non-degradation standard, and that additional development capacity remains.

Capitol Interchange Improvements

Improvement of the Capitol interchange would not result in increased growth or development and would not result in substantive direct or indirect impacts to groundwater supply or quality. Increases in impervious surface would result as new lanes/ramps are constructed; however, this would not substantially impact groundwater supply or quality.

Custer Interchange

The Preferred Alternative is not expected to cause adverse impacts to water availability or supply in the Custer interchange area.

Any future new development shifted to the Custer Avenue interchange area would likely obtain water from either the municipal supply system, or from new wells installed predominantly in the Helena Valley-Fill Aquifer. In the event that some new development occurred in areas not served by the municipal sewer system, Montana's Non-degradation laws would apply. Nitrate levels in some wells within the Custer interchange area already exceed the Non-degradation standard. In areas that already exceed the Non-degradation standard, no additional on-site sewage treatment systems would be allowed, and developers would be required to either connect to the municipal system, or locate their development elsewhere. Many areas are well below the Non-degradation standard for nitrate levels, and additional development capacity remains. The Helena Valley-Fill Aquifer has the potential to produce large capacity wells with discharge in excess of 1,000 GPM.

5.3.10.3 Mitigation

Mitigation measures for direct and indirect impacts to water resources and water quality that will be implemented by MDT during construction include:

- ▶ All work in and adjacent to wetlands and water resources will follow state, federal, and local permit requirements.
- ▶ A Stormwater Pollution Prevention Plan (SWPPP) employing Best Management Practices for controlling erosion and sediment transport will be implemented in the project area.
- ▶ Development of a revegetation plan, erosion control plan, and stormwater pollution prevention plan will be coordinated with appropriate permitting and resource agencies.

5.3.11 Wetlands

5.3.11.1 Impacts

Wetland impacts were approximated from conceptual designs compared to the actual wetland delineation (see **Table 5-3**). Design has not been finalized for the Preferred Alternative. Indirect wetland quantities include wetlands mapped for a larger study area as part of the 1999 Helena Valley Wetland Mapping effort⁵. Preliminary Corps jurisdiction has been indicated for estimated impacts.

The Preferred Alternative is not expected to result in substantive direct or indirect impacts to wetlands as few, primarily associated with canals and drainage ditches, occur in areas of projected development north of Custer Avenue. Direct impacts by wetland type and overall rating category are summarized in **Table 5-3**.

Table 5-3
Direct Wetland Impacts for the Preferred Alternative

| Wetland Type or Category | Jurisdictional Impacts hectare (acre) | Approximate Non-Jurisdictional Impacts hectare (acre) |
|---------------------------------|--|--|
| Scrub-Shrub | 0.0 | 0.2 (0.4) |
| Emergent | 0.0 | 0.3 (0.8) |
| Aquatic Bed | 0.0 | 0.0 |
| Total Wetland Type | 0.0 | 0.50 (1.24) |

continued

⁵ Helena Wetland Community Partnership, 2000. *Draft wetland maps of the Helena Valley*. Last Chance Audubon Society, Lewis & Clark County, Montana Audubon, Montana Wetlands Trust, Pamala Hackley. Helena, MT. Unpublished aerial photograph-based wetland maps.

Table 5-3 (continued)
Direct Wetland Impacts for the Preferred Alternative

| Wetland Type or Category | Jurisdictional Impacts hectare (acre) | Approximate Non-Jurisdictional Impacts hectare (acre) |
|---------------------------------|--|--|
| Category I | 0.0 | 0.0 |
| Category II | 0.0 | 0.0 |
| Category III | 0.0 | 0.2 (0.4) |
| Category IV | 0.0 | 0.3 (0.8) |
| Total Wetland Category | 0.0 | 0.50 (1.24) |
| South Helena Interchange | 0.0 | 0.0 |
| Capitol Interchange | 0.0 | 0.0 |
| Custer Interchange | 0.0 | 0.48 (1.2) |
| Montana City Interchange | 0.0 | 0.0 |
| West side Frontage Road | 0.0 | 0.0 |
| Broadway Underpass | 0.0 | 0.0 |
| Cedar Street Widening | 0.0 | 0.0 |
| Lincoln Road Interchange | 0.0 | 0.02 (0.04) |
| Total Estimated Impacts | 0.0 | 0.50 (1.24) |

No wetlands would be impacted by construction of the Montana City interchange improvements, the west side Frontage Road, South Helena interchange, or Capitol interchange. However, temporary construction-related sedimentation associated with the Broadway pedestrian/bicycle underpass could occur to Wetland 10. BMPs would be implemented to minimize impacts to this wetland.

Custer Interchange

Approximately 0.16 hectare (0.4 acre) of Wetland 15 (non-jurisdictional borrow ditch), 0.16 hectare (0.4 acre) of Wetland 7 (non-jurisdictional drainage ditch), and 0.16 hectare (0.4 acre) of Wetland 13 (an isolated non-jurisdictional marsh) would be filled in association with the Custer interchange, auxiliary lanes and Custer Avenue widening.

Minor, temporary sedimentation at Wetlands 7, 8, and 13 may be associated with construction of the Custer interchange during precipitation events until exposed fill slopes are stabilized.

Indirect wetland losses as a result of potential future adjacent interchange development could reduce the overall habitat value of the 1.5-hectare (3.8-acre) wetland 8 site. With this alternative, land use growth may shift to take advantage of improved access provided by a new Custer Avenue interchange and may concentrate near the interchange.

Lincoln Road Interchange Improvements

Approximately 0.02 hectare (0.04 acre) of Wetlands 1B and 1C (non-jurisdictional canal fringes) would be filled (and relocated) as part of interchange improvements. This supporting element would not result in substantive indirect impacts to wetlands. Minor, temporary sedimentation at Wetlands 1B and 1C may be associated with possible canal relocation, as well as construction at the interchange, and during precipitation events until exposed fill slopes are stabilized.

5.3.11.2 Mitigation

None of the wetlands that are likely to be impacted by the Preferred Alternative improvements were initially identified as being Corps jurisdictional. However, this determination will be verified when final design and permitting occur, as the Corps determination criteria or site conditions may change.

The 1990 *Memorandum of Agreement Between the Environmental Protection Agency and the Corps Concerning the Determination of Mitigation Under the Clean Water Act Section 404(b)(1) Guidelines* requires that wetland mitigation of jurisdictional wetlands be addressed in the following sequence:

1. Avoid potential impacts to the maximum extent practicable.
2. Minimize unavoidable impacts to the extent appropriate and practicable.
3. Compensate for unavoidable adverse impacts that remain after all appropriate and practicable minimization has been required.

Additionally, Department of Transportation Order 5660.1A, "Preservation of the Nation's Wetlands," provides guidance regarding construction in wetlands (jurisdictional and non-jurisdictional) falling under the scope of EO 11990 must avoid impacts to those wetlands unless there is no practicable alternative to the construction and the proposed action includes all practicable measures to minimize harm (DOT 1978). Preliminary determinations as to whether given wetlands are likely jurisdictional, non-jurisdictional and/or fall under the scope of EO 11990 are provided in Table 3-17 or otherwise discussed previously. MDT will also adhere to the FHWA 23 CFR 777, "Mitigation of Impacts to Wetlands and Natural Habitats," on the eligibility of FHWA funds for mitigating impacts caused by Federal transportation projects to wetlands and other natural habitats.

5.3.11.3 Avoidance and Minimization

The estimated wetland impacts are based on conceptual design and have been avoided and/or minimized as much as can be determined with the conceptual design. Avoidance and minimization of wetland impacts will continue in final design.

To minimize sedimentation as well as construction hardship, construction in wetlands will be timed in order for these sites to be as dry as possible as allowed by the construction schedule.

5.3.11.4 Compensation

Compensatory mitigation for loss of wetlands will be pursued under the MDT Interagency Wetland Group operating procedures. A number of wetland mitigation opportunities exist in the area that are currently being evaluated by MDT and other interested agencies.

1. MDT currently owns the property containing Wetland 12 (the large gravel pit wetland), as well as an 8-hectare (20-acre) parcel immediately adjacent to the east. These properties were purchased with the intent of using the 8-hectare (20-acre) parcel as a gravel source for the Forestvale interchange project, then designing and reclaiming the area as a wetland mitigation site. This would be accomplished by excavating to existing groundwater levels as determined by monitoring wells that have been in place at the existing gravel pit wetland for several years. However, a number of issues are associated with this site: a) lower groundwater levels than initially estimated, and b) will borrow material be removed from the site for proposed improvements?
2. Another wetland mitigation opportunity may exist in association with lower Tenmile Creek. The Lower Tenmile Creek Watershed Group is looking at potential stream and wetland restoration projects along Tenmile Creek as part of activities associated with restoring the watershed. As a result of these efforts by the group, there may be several potential restoration projects that MDT could participate in as a cooperator and provide MDT with credits in meeting wetland mitigation credit objectives for wetland impacts in the watershed. MDT is cooperating with the various partners in the Lower Tenmile Creek Watershed Group and Inter-agency Wetland Group (IAWG) members to identify mitigation projects suitable for MDT's needs at this time.

At this time, it is premature to develop a Wetland Mitigation Plan or coordinate with the Inter-Agency Wetland Group since MDT's study of potential sites is in the preliminary stages. In addition, the prioritization of construction projects associated with the Preferred Alternative is undetermined.

As stated earlier, it is assumed for purposes of this analysis that any temporary impacts to wetlands within the right-of-way and construction easement areas will be restored to original contours and revegetated at the earliest practicable date following disturbance.

5.3.11.5 General Mitigation Measures

In addition to applicable measures listed under Section 5.3.12.2, Vegetation, Wildlife, and Aquatic Resources, the following general mitigation measures can minimize disturbance of wetlands and other Waters of the U.S. during construction of the Preferred Alternative:

- ▶ Acceptable erosion control devices and BMPs will be installed at the edges of wetlands and other Waters of the U.S. prior to construction. All exposed soils will be permanently stabilized at the earliest practicable date. A SWPPP will be prepared and submitted to DEQ in compliance with their Montana Pollution Discharge Elimination System (MPDES) regulations. BMPs will be included in the design of this plan using guidelines as established in MDT's Erosion and Sediment Control BMP Reference and Field Manual. The objective is to minimize erosion of disturbed areas during and following disturbance. Regular inspections of erosion control devices will be carried out in compliance with MPDES regulations.
- ▶ Temporarily disturbed wetland areas will be revegetated with desirable species as specified by MDT at the earliest practicable date following disturbance and comply with MPDES and Section 404 permit conditions.

All work in and adjacent to wetlands and water resources will follow state, federal, and local permit requirements.

5.3.12 Vegetation, Wildlife, and Aquatic Resources

5.3.12.1 Impacts

As part of the Preferred Alternative all construction activity could result in direct wildlife mortality; primarily to those species with limited mobility and/or those that could conceivably be occupying their burrows or nests at the time of construction (e.g., mice, voles, young birds/eggs, frogs, salamanders, snakes, badgers, ground squirrels). More mobile species, such as adult deer, coyotes (*Canis latrans*), and most adult birds, would be able to avoid direct mortality by moving into adjacent habitat.

Montana City Interchange Improvements

All of the proposed construction would occur in areas that are immediately adjacent to the existing Montana City interchange and are currently subjected to other sources of human disturbance. Consequently, habitat to be affected by the improvements is generally judged overall as being of low quality. From a quality perspective, direct impacts to existing vegetation and wildlife habitat in the study area are considered relatively minor.

This supporting element would not result in direct or indirect impacts to aquatic resources as none occur in the area.

This supporting element would not result in increased growth or land use and would not result in substantive indirect impacts to vegetation or wildlife. Noxious weeds may establish in disturbed areas until seeded vegetation establishes.

South Helena Interchange

Construction of a South Helena interchange and associated frontage road south of Helena would impact dry native and introduced grasslands that are not currently managed for any particular use. Habitat that could be affected is generally judged overall as being of low to moderate quality. Therefore, from a quality perspective, direct impacts to existing vegetation and wildlife habitat in this portion of the study area are considered relatively minor.

For the South Helena interchange, supportive commercial development, such as gas stations, may occur adjacent to the new interchange. Increased residential and commercial development would proportionally decrease available wildlife habitat that currently exists in undeveloped areas in this portion of the study area, particularly for mule deer. Extension of the two-lane Frontage Road to the south and north, along with the associated traffic increase in and through the area, would incrementally increase the difficulty for mule deer and other species crossing the I-15 Corridor between forested and prairie habitats. Noxious weeds may establish in disturbed areas until seeded vegetation establishes.

No streams or irrigation ditches would be directly affected at the South Helena interchange. Construction at this location is not expected to result in substantive indirect impacts to aquatic resources as few (scattered intermittent or ephemeral drainages) occur in the general area of projected associated development south of Helena. None occur at the proposed South Helena interchange location.

West side Frontage Road

Presently, a network of two-track dirt and improved gravel roads occur between Colonial Drive and South Hills Road north of Montana City. The existing west side Frontage Road between South Hills Road and Montana City is paved. This area supports scattered private residences, with more land being developed in the area for private home sites. Construction of a west side Frontage Road through this section would impact dry native and introduced grasslands that are not currently managed for any particular use. Habitat to be affected by the project is generally judged overall as being of low to moderate quality and somewhat impacted by the current two track dirt trails. Therefore, from a quality perspective, direct impacts to existing vegetation and wildlife habitat in the study area are considered relatively minor.

This supporting element would not result in direct or indirect impacts to aquatic resources as none occur in the area.

Construction of the west side Frontage Road may result in increased development in the area due to improved access between Montana City and Helena. Such increased development would proportionally decrease available wildlife habitat that currently exists in undeveloped areas in this portion of the study area, particularly for mule deer. Extension of the two-lane frontage road to the south, along with the associated traffic increase, would incrementally increase the difficulty for mule deer and other species associated with crossing the I-15 corridor between forested and prairie habitats.

No MNHP-listed plant or animal species of concern are known to occur in this portion of the study area; substantive indirect impacts to such species are not expected. Noxious weeds may establish in disturbed areas until seeded vegetation establishes.

Broadway Underpass for Pedestrian and Bicycle Use

All of the proposed construction would occur in areas that are immediately adjacent to existing roadways and are currently subjected to other sources of human disturbance. Consequently, habitat to be affected by the project is generally judged overall as being of low quality. Therefore, from a quality perspective, direct impacts to existing vegetation and wildlife habitat in the study area are considered relatively minor.

This supporting element would not result in direct or indirect impacts to aquatic resources. Minor, temporary sedimentation at Wetland 10 (an intermittent drainage bottom) may be associated with construction of the pedestrian/bicycle underpass at Broadway during precipitation events until exposed fill slopes are stabilized.

This supporting element would not result in increased growth or land use and would not result in substantive indirect impacts to vegetation or wildlife.

Capitol Interchange Improvements

Improvement of the Capitol interchange would not result in substantive direct impacts to vegetation or wildlife due to the developed nature of the area. Improvements of the Capitol interchange would not result in increased growth or land development and would not result in substantive indirect impacts to vegetation or wildlife.

No MNHP-listed plant or animal species of concern are known to occur in this portion of the study area; substantive direct impacts to such species are not expected.

No streams or irrigation ditches would be directly affected at the Capitol interchange. Construction at this location is not expected to result in substantive indirect impacts to aquatic resources.

Custer Interchange

The proposed construction (new interchange, widening and auxiliary lanes) would occur in areas that are immediately adjacent to the existing interstate and are currently subjected to other sources of human disturbance. Some undeveloped grassland occurs on both sides of the interstate north and south of Custer Avenue, which provides seasonal habitat for a small number of mule deer, fox, various small mammals and birds of prey. Auxiliary lanes are proposed to be constructed between Custer and Capitol as shown in **Figure 4-7**. This would result in impacts to the existing adjacent vegetation.

With the Preferred Alternative, new development may shift to take advantage of improved access provided by a new Custer Avenue interchange (located in a designated Urban Area). Most new development may concentrate near the interchange. Habitat in the Custer interchange area generally consists of seeded grasslands surrounded by moderate to heavy industrial development. Wildlife occupying this habitat, including scattered mule deer and red fox, could be displaced. Noxious weeds may establish in disturbed areas until seeded vegetation establishes. However, substantive impacts to vegetation and wildlife populations are not expected.

Minor drainage ditch relocation would occur in association with the Custer interchange construction. This alternative is not expected to result in substantive indirect impacts to aquatic resources in association with Custer Avenue, as few, primarily canals and drainage ditches, occur in areas of projected development north of Custer Avenue. Minor, temporary sedimentation at Wetland 7 (a drainage ditch) may be associated with construction of the Custer interchange during precipitation events until exposed fill slopes are stabilized.

Lincoln Road Interchange Improvements

All of the proposed construction would occur in areas that are immediately adjacent to the existing interchange and are currently subjected to other sources of human disturbance, primarily farming and grazing activities. Consequently, habitat to be affected by the project is generally judged overall as being of low quality. From a quality perspective, direct impacts to existing vegetation and wildlife habitat in the study area are considered relatively minor.

Remnant black-tailed prairie dog burrows that occur within the existing right-of-way and adjacent fields near the southbound off-ramp could be directly impacted by construction, depending upon final construction limits. Potential dispersal of prairie

dogs from active towns approximately 1.5 kilometers (0.9 mile) north of the interchange to the presumably inactive scattered burrows immediately north of the Lincoln Road interchange could be discouraged during and following construction.

This supporting element would not result in direct impacts to aquatic resources as none occur in the area. Minor, temporary sedimentation at Wetlands 1B and 1C may be associated with construction at the interchange during precipitation events until exposed fill slopes are stabilized.

This supporting element would not result in increased growth or land use and would not result in substantive indirect impacts to vegetation or wildlife. Noxious weeds may establish in disturbed areas until seeded vegetation establishes.

5.3.12.2 Mitigation

The following mitigation measures will be implemented by MDT, as necessary, during final design to minimize impacts to terrestrial and aquatic resources:

- ▶ Raptor proofing of rural overhead power lines that are relocated in association with the project will be included in accordance with MDT policies.
- ▶ Due to the relatively low numbers of reported deer-vehicle collisions over the length of the study area (average of approximately 11 per year) and general lack of specifically concentrated movement corridors, no mitigation measures are proposed at this time. Fencing options will be explored during final design.
- ▶ Appropriate measures will be taken to prevent the introduction or spread of noxious weeds; however, project-specific control methods are not recommended in this document. In accordance with 7-22-2152 MCA and 60-2-208 MCA, MDT will re-establish a permanent desirable vegetation community along all areas disturbed by proposed construction. A set of revegetation special provisions will be developed by MDT Botanist that must be followed by the construction contractor. The seeding provisions developed for the project will be forwarded to the responsible county weed board for approval.

Additionally, a special provision is typically included in bid documents that reminds contractors to comply with MDT Standard Specification for **Noxious Weed Management**.

Weed management activities are the responsibility of the contractor at borrow pits, aggregate sources, staging and storage areas, pavement processing plant sites, etc. that are selected/provided by the contractor. These activities are coordinated between the contractor and the county weed board. The weed board determines any weed management requirements, and the contractor is responsible

to the board for meeting those requirements. Consequently, weed management activities at these ancillary sites are generally beyond MDT's jurisdiction, responsibility and authority.

The following measures will be implemented by MDT, as necessary, to minimize impacts to aquatic resources. Additional state and federal water quality permit conditions may be stipulated at the time of permit issuance. All work in and adjacent to wetlands and water resources will follow state, federal, and local permit requirements.

- ▶ Acceptable erosion/sedimentation control devices will be installed at the edges of wetlands and other Waters of the U.S. prior to construction. All exposed soils will be permanently stabilized at the earliest practicable date. A SWPPP will be prepared and submitted to DEQ in compliance with their Montana Pollutant Discharge Elimination System (MPDES) regulations. BMPs will be included in the design of this plan using guidelines established in MDT's Erosion and Sediment Control BMP Reference and Field Manual. The objective is to minimize erosion of disturbed areas during and following disturbance. Regular inspections of erosion control devices will be carried out in compliance with MPDES regulations.
- ▶ Temporarily disturbed wetland areas will be revegetated with desirable species as specified by the MDT Botanist at the earliest practicable date following disturbance and comply with MPDES and Section 404 permit conditions.

5.3.13 Floodplains

5.3.13.1 Impacts

The improvements associated with the Preferred Alternative do not lie in the 100-year floodplain and therefore would result in no new encroachment on the 100-year floodplain, and therefore has no direct impacts (see **Figure 3-23**). Natural and beneficial floodplain values, such as the natural moderation of floods and the maintenance of groundwater, would not be impacted by the Preferred Alternative. Since the expected indirect growth areas associated with the Preferred Alternative do not lie within or adjacent to the floodplain, no indirect impacts to the 100-year floodplain are anticipated. The Preferred Alternative is considered to be in compliance with EO #11988.

5.3.13.2 Mitigation

No mitigation measures for floodplains are necessary for the Preferred Alternative.

5.3.14 Wild & Scenic Rivers

Since no wild or scenic rivers exist in the study area, no direct or indirect impacts would occur, therefore no mitigation is required.

5.3.15 Threatened or Endangered Species

5.3.15.1 Impacts

Aside from occasional bald eagle use in the greater Helena Valley, no listed or proposed threatened or endangered species or quality habitat are known to occur in the study area. Consequently, substantive direct and indirect impacts to threatened or endangered species (mountain plover, Ute ladies' tresses orchid, black-tailed prairie dogs) are not expected.

New development may shift to take advantage of improved access provided by a new Custer Avenue interchange (located in a designated Urban Area). Most new development may concentrate near the interchanges. Habitat in the Custer interchange area generally consists of seeded grasslands surrounded by moderate to heavy industrial development.

Bald Eagle (*Haliaeetus leucocephalus*)

The Preferred Alternative would not result in direct loss of possible eagle foraging habitat at the city stormwater retention basins at Wetland 8 along I-15 between Custer Avenue and Cedar Street. This site may be incidentally used by transient bald eagles, but is not considered critical habitat. No impacts to nesting habitat would occur.

Construction activities during all seasons could conceivably temporarily disturb or displace (primarily) non-breeding eagles where the project is visible from foraging habitat. However, because the areas and duration of disturbance would be relatively confined, and undisturbed similar habitat for displaced birds is abundant in the surrounding area, these impacts are not considered substantial.

Mountain Plover (*Charadrius montanus*)

As of September 9, 2003, the mountain plover is no longer proposed for federal listing or considered a candidate specie. Construction during spring and fall could conceivably temporarily disturb transient mountain plovers during stopovers along the study area. However, no stopover areas are known in the study area, and similar habitat is abundant in the immediate vicinity and would provide ample habitat for displaced birds. Therefore, substantial impacts to migrating mountain plovers resulting from construction of the Preferred Alternative are not expected. No impacts to known nesting habitat would occur.

Ute Ladies' Tresses (*Spiranthes diluvialis*)

Ute Ladies' Tresses, a perennial orchid, has never been documented in Lewis & Clark County, but was recently found in adjacent Broadwater County. This species also has been documented in Jefferson County, several miles south of the study area. No species were observed during wetland delineation of the area in September 2002 nor during a 2001 sensitive plant survey.

Black-tailed Prairie Dog (*Cynomys ludovicianus*)

Future increased development would proportionally decrease available wildlife habitat that currently exists in undeveloped areas in the northern portion of the study area near the Lincoln interchange. A few black-tailed prairie dog towns are scattered through the north Helena valley, most of which have been subject to subdivision or other forms of development. An active town approximately 1.5 kilometers (0.9 mile) north of the Lincoln interchange on the east side of the highway could be affected should development occur in this area.

With the Lincoln Road interchange improvements remnant black-tailed prairie dog burrows that occur within the existing right-of-way and adjacent fields near the southbound off-ramp could be directly impacted by construction, depending upon final construction limits. Potential dispersal of black-tailed prairie dogs from active towns approximately 1.5 kilometers (0.9 mile) north of the interchange to the presumably inactive scattered burrows immediately north of the Lincoln Road interchange could be discouraged during construction. Black-tailed prairie dogs are considered a candidate species for listing under the Endangered Species Act, but are afforded no legal protection under the act.

5.3.15.2 Determinations of Effect

The following determinations of effect for threatened and endangered species was based on the preceding analysis. No formal determination of effect is rendered with respect to the black-tailed prairie dog as this species is not listed or proposed for listing as threatened or endangered. No formal determination of effect is needed for the mountain plover since it is no longer proposed for listing as of September 9, 2003.

The Preferred Alternative would **not affect** the listed threatened bald eagle or Ute ladies' tresses orchid.

5.3.15.3 Conservation Measures

The following conservation measures will be considered to ensure that any impacts to bald eagles and black-tailed prairie dogs are minimized:

- ▶ Bald eagle nesting status in the study area will be confirmed within one year of initiation of construction of each segment, prior to construction via, at a minimum, coordination with MFWP biologists and a MNHP records check. Depending on the location of such nests, if any, appropriate spacial and temporal construction restrictions may be warranted. Further coordination with the USFWS may be required should new nest sites ultimately be discovered in the study area.
- ▶ Raptor proofing of rural overhead power lines that are relocated in association with the project will be included in accordance with MDT policies.
- ▶ The location for construction-related activities, such as staging and borrow/gravel source activities, are independently determined by the construction contractor, who is responsible for compliance with all laws and activities associated with those activities. If MDT becomes aware of any threatened, endangered, proposed or candidate species located in the vicinity of these activities, they will inform the contractor of those locations and of potential restrictions that may be associated with avoiding impacts to those species. MDT will also recommend that the contractor contact and coordinate with the USFWS.

5.3.16 Cultural Resources

5.3.16.1 Impacts

There would be no direct or indirect impacts to archaeological or historical sites with the Preferred Alternative. The Preferred Alternative will result in minor effects to three properties eligible for inclusion on the National Register of Historic Places. Additional bridge piers will need to be placed on the Montana Rail Link property (the historic Northern Pacific Railroad) and construction of the Custer Avenue and Lincoln Road interchanges will slightly alter the setting at two other historic properties. The SHPO has concurred with determinations of **No Adverse Effect** for all three properties and no mitigation measures are required. SHPO coordination letters are included in Volume 2, Appendix B.

Montana City Interchange Improvements

One archaeological site (24JF697, Proposed Montana City Archaeological District) and one prehistoric site (24JF1719, tipi ring site/lithic scatter) are located near the Montana City interchange. The reconstruction of the Montana City interchange is planned to occur within the current right-of-way and area already disturbed by the current interchange. Neither site 24JF697 nor 24JF1719 would be impacted by the proposed action. One historic site (24JF1600, Montana City Railway) is also located near the Montana City interchange but is well outside the area of potential effects (APE) and would not be impacted by the proposed action. Coordination with local Native American groups has occurred and documentation is provided in Volume 2, Appendix B.

Custer Interchange

Historic **Site 24LC1786** (Washburn Farmstead/Eddie Barbeau Home), recorded within the study area and is considered eligible for the NRHP, is located east of I-15 and north of Custer Avenue. The proposed Custer Avenue interchange design includes relocation of the east side Frontage Road. The frontage road intersection with Custer Avenue would be relocated further east to align with Washington and would be situated north of site 24LC1786. It is likely the relocation of the frontage road would decrease the noise associated with the current frontage road location.

Historic **Site 24LC1139** (Northern Pacific Railroad), which is eligible for the NRHP, crosses under I-15, north of the Capitol interchange. The proposed addition of auxiliary lanes on I-15 between Cedar and Capitol would require widening or reconstructing the bridges over the Northern Pacific Railroad. This will require additional piers being located adjacent to the existing bridge piers. No direct impacts to the rails or rail yard function would occur as part of this action. Construction impacts would be temporary in nature and would not change the historic significance of the site. Written coordination with the Montana Rail Link and Burlington Northern Santa Fe Railroad for this site occurred on November 18, 2002 and December 19, 2002. Copies of the coordination letters are included in Volume 2, Appendix B.

Lincoln Road Interchange Improvements

One historic property considered eligible for the NRHP would be affected by the reconstruction of the Lincoln Road interchange. **Site 24LC1784** (Deal House) is located west of I-15 and north of Lincoln Road. The proposed interchange reconstruction includes widening the Lincoln Road bridge over I-15 and adding pedestrian and bicycle facilities. The interchange/bridge approaches would transition from the current two lanes east and west of I-15 to match the new bridge. It is at this transition area west of I-15 that Site 24LC1784 is located. The access to the property will be maintained and no direct impacts are expected to occur to the structure. However, some right-of-way may be required from the unpaved and un-delineated entranceway to the restaurant parking lot for fill slopes or retaining walls associated with the roadway approaches. No impacts to the historic Deal House will occur, as the structure is located approximately 25 meters (75 feet) from Lincoln Road. See **Figure 2-18** for the site location in relation to the proposed interchange design.

This information, along with a determination of **No Adverse Effect** was contained in a letter to the SHPO dated November 12, 2002 (see Volume 2, Appendix B). In a response dated November 25, 2002, the SHPO concurred with the determination of effect. No response has been received from either of the two Native American groups contacted for this project.

5.3.16.2 Mitigation

No mitigation measures are required for cultural resources.

In the event that previously unrecorded cultural material is found during construction, activities in the immediate area will be halted, and the MDT archaeologist will be contacted to assess the find.

5.3.17 Hazardous Waste

5.3.17.1 Impacts

Hazardous waste sites are regulated by the Resource Conservation and Recovery Act (RCRA) and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). The potential for encountering hazardous waste and/or hazardous materials during project construction was evaluated for the I-15 Corridor study area through a Modified Phase I Environmental Site Assessment.

At the time of the Phase I Environmental Site Assessment, the study area had a medium environmental risk due to the proximity of fueling stations to some of the construction areas. Underground Storage Tank (UST) sites are regulated by MDEQ. A medium risk denotes that there are suspected or known environmental concerns that would warrant further investigation. The amount of further environmental investigation would depend on the extent of the construction disturbance created by the Preferred Alternative.

South Helena Interchange

There are no hazardous materials sites located within the area of construction disturbance for the improvements planned at the South Helena interchange.

Capitol Interchange Improvements

There are two sites that have potential to be impacted by the construction activities at the Capitol interchange. First, MDT has a UST site located at 2701 Prospect Avenue, which is approximately 0.52 kilometers (0.32 miles) from the estimated construction limit. The second site, known formerly as Phillips 66 gas station, is a UST site located at 2101 Prospect Avenue, which is within the estimated construction limit. These are shown in **Figure 3-27**.

Indirect impacts could result with any commercial redevelopment near the Capitol interchange.

Cedar Street Widening

There are five sites that have potential for being directly impacted by the construction activities along Cedar Street. These are:

- ▶ Gabe's (formerly Conoco Pop Inn; remediation is still active) is a LUST/UST site located at 1701 Cedar Street

- ▶ Tim's Exxon is a LUST/UST site located at 1721 Cedar Street
- ▶ Noon's #422 is a LUST/UST site located at 1801 Cedar Street
- ▶ Kmart #7029 is a UST site located at 1700 Cedar Street
- ▶ U.S. Postal Service is a UST site located at 2300 North Harris

Custer Interchange

There are two sites that have potential to be impacted by the construction activities at the Custer interchange, Custer Avenue widening and associated auxiliary lanes. The first site is the Wastewater Treatment Plant located at 1708 Custer Avenue, which is approximately 55 meters (180 feet) from the estimated interchange construction limit. This is a recorded UST site.

The second site is the Montana Rail Link property under I-15. The addition of auxiliary lanes between Custer and Capitol requires the reconstruction of the bridges over the railway, which has potential environmental conditions that could be affected by construction. An Initial Phase II Environmental Site Assessment has been conducted and the findings are described in Section 5.3.17.2.

Indirect impacts could be caused by the potential shift in development to the Custer interchange area. Implementation of the improvements could cause the listed hazardous waste sites to be encountered.

5.3.17.2 Mitigation

To mitigate direct impacts to hazardous waste sites, further environmental investigation of the properties with potential environmental risks will be conducted prior to construction of the Preferred Alternative. If it appears that these sites would be within or directly adjacent to the area of disturbance, then Phase II soil and possibly groundwater sampling will be completed. Further investigation may consist of a regulatory report review to determine if any contamination plumes caused from the above referenced sites would be encountered during construction, or that the appropriate regulatory agency considers the contamination to be remediated to the extent of requiring no further remedial action.

A Phase II Investigation was completed for the MRL property that could be affected by the I-15 bridge replacement. Soil and groundwater samples were collected from 8 soil borings and 2 surface soil locations in the area of the I-15 bridge/rail yard. Elevated concentrations of lead were detected in several of the soil borings and in the two surface soil samples collected near bridge caissons in the rail yard. The highest lead concentration detected was 3,800 mg/kg (parts per million) in one of the surface soil samples. This concentration is considerably higher than residential standards but is not unusual for an industrial setting. Construction workers will be made aware of the

lead concentrations in the soil and will take precautions to minimize dust generation and utilize dust control measures during construction activities.

If the removal of any USTs and/or UST systems is required, the removal work will be conducted in accordance with the Administrative Rules of Montana (ARM) Title 17, Chapter 56, Sub-Chapter 7, Rule 17.56.702, Permanent Closure and Changes-In-Service. This rule provides specific procedures for the closure and handling of a UST system and associated materials, and provides for the proper management of worker and public safety during construction.

Special provisions will detail proper handling of anticipated and unanticipated contaminated materials during the construction phase of the project. A site-specific Health and Safety Plan will be required as part of the contractor submittals for work involving known contaminated material. Any excavation, pumping, and/or dewatering activities of contaminated soils or waters requires proper treatment and disposal.

Mitigation required for indirect impacts associated with potential new development in the interchange areas is the responsibility of the developers who are required to conduct risk assessments prior to site development.

5.3.18 Visual

5.3.18.1 Impacts

Visual impacts of the Preferred Alternative were determined by comparing conceptual design plans and the existing visual character features with photographs and field visits. Some general features of the Preferred Alternative that influence the visual quality of the study area are: removal of existing vegetation where improvements are proposed, new or reconstructed bridges over I-15 in proposed locations, additional pavement for the west side Frontage Road, and auxiliary lanes.

Retaining walls may be required for improvements in the northwest and southwest quadrants of the Capitol interchange and the Custer interchange. The type, color and material of these walls are undetermined at this time. Materials and colors that blend with the surrounding landscape and built environment would be least intrusive to views in these areas.

The Preferred Alternative proposes a number of bridges over I-15 to be newly constructed, replaced, reconstructed, or widened and over the railroad to be replaced with new bridges. Bridges would likely be of similar design to those existing in the I-15 Corridor but would be wider. New interchanges would introduce a bridge over I-15 and would interrupt the motorist's immediate views and also the foreground

views from vantage points adjacent to the I-15 Corridor. New interchanges would include signing, lighting, signals, and other common interchange features.

New interchange ramps or auxiliary lanes would convert some undeveloped land to paved roadway. These interchange ramps also would be closer to existing residences and businesses, particularly in the Cedar Street and Capitol interchange areas, decreasing the existing undeveloped land visual buffer adjacent to the highway.

Visual conditions associated with supportive development and/or indirect development at South Helena, Custer Avenue and along the west side Frontage Road could include commercial signs, additional paved areas for parking and/or circulation, landscaped area, utilities and lighting, varied architectural styles, building heights and colors and potential for varied commercial and residential developments. Examples of similar developed transportation corridors are depicted in Photo 5-1 and Photo 5-2.



Montana City Interchange Improvements

Construction of the Montana City interchange improvements would involve replacing the existing overpass bridge with a wider structure and minor changes to the existing ramps on the north side of the interchange. All improvements would occur within right-of-way and immediately adjacent to existing roadways and structures. These changes would not create new or unusually different visual impressions looking toward or away from the interchange. No direct or indirect impacts of any consequence would result from this improvement.

West side Frontage Road

Some existing vegetation would be removed to add pavement and to accommodate the west side Frontage Road at the South Helena interchange. Indirect impacts for this supporting element are related to the supportive development that is likely to occur due to the new road and improved access.

South Helena Interchange

The area surrounding the proposed South Helena interchange is mostly undeveloped with new growth occurring to the west. The South Helena interchange would require the relocation of the west side Frontage Road, resulting in additional open land being converted to pavement. Supportive development would be expected to be similar to that depicted in Photo 5-2.

Broadway Underpass for Pedestrian and Bicycle Use

Minor visual impacts would occur as a result of removal of existing vegetation to add pavement for the underpass. The paved trail would initially connect on the east to 18th Street adjacent to the MDT facility. Much of this area currently includes parking lot and buildings associated with the MDT facility. To the west, the trail would connect to the cul-de-sac on Broadway.

Custer Interchange

Custer Avenue is currently largely undeveloped though some commercial development is occurring. The area is currently zoned by the city for commercial and public lands and institutions uses. Widening Custer Avenue will change the current visual conditions to a minor degree in creating a wider paved area. The Custer interchange also would require minor relocation of the east side Frontage Road, resulting in additional open land being converted to pavement. Development and increased traffic also will change the character of the currently undeveloped corridor. As an indirect impact, it could be expected for Custer Avenue to become developed with commercial establishments similar to Cedar Street, changing the visual character along Custer Avenue.

Cedar Street Widening

Cedar Street currently is fully developed with commercial development and the right-of-way includes a grassed area with a sidewalk. Elements common to this type of corridor include overhead signs and utilities, varied curb cuts, and roadway signing and lighting. Widening Cedar Street to five lanes may result in minor right-of-way impacts in some locations on either side of the road. This could impact the current grassed/sidewalk treatment and potentially result in removal or relocation of some trees.

Lincoln Road Interchange Improvements

Additional open space converted to highway use would cause slight loss of a visual buffer. Approach roads would be closer to existing structures. Some existing vegetation would be removed to add pavement.

No indirect impacts are identified for this supporting element.

Temporary visual impacts associated with the Preferred Alternative due to construction activity could include:

- ▶ Construction equipment, signing and excavated material associated with construction in the staging areas.
- ▶ Dust and debris associated with construction activities. The dust would be kept to a minimum and controlled by dust suppression techniques to minimize related air quality impacts.
- ▶ Traffic congestion and detours associated with construction activity and detours.

5.3.18.2 Mitigation

Mitigation measures for direct impacts to the visual character of the I-15 Corridor and newly constructed or widened cross streets include:

- ▶ Provide architectural interest or color into retaining wall design, bridges and other structural features.
- ▶ All new structures, signing, lighting, etc. related to future highway improvements will be consistent with local standards and guidelines, and MDT safety specifications.
- ▶ Revegetate disturbed areas as soon as practicable consistent with adjacent landscape features and with desirable species as specified by the MDT Botanist, while still adhering to safety requirements necessary in clear zones. Coordinate with local municipalities and other landowners to replace important landscaping features lost to construction impacts.

In addition, local planning boards could use zoning, land use planning and open space purchases to provide protection for future visual conditions.

5.3.19 Parks and Recreation

5.3.19.1 Impacts

South Helena Interchange

The South Helena interchange would be located in close proximity to the Lewis & Clark County proposed East Ridge Park. There are no impacts since no land has been purchased for this park. Coordination between MDT and the city and/or county park department staff is recommended prior to final design. Other proposed parks south and west of Helena would have improved access with the construction of this new interchange. Access to these facilities by pedestrians and bicyclists would be improved due to the proposed pedestrian/bicycle facilities included with the new interchange.

Capitol Interchange Improvements

No parkland would be directly impacted by the Preferred Alternative improvements. The Preferred Alternative would have an indirect benefit to the park and recreation resources located off the Capitol interchange (see **Figure 3-29**). Improved accessibility to the parks and recreation areas for motorists, pedestrians and bicyclists would result from the proposed improvements to the interchange. Visitors to these parks and recreation areas, as well as those traveling to the larger parks west of Helena, would find the interchange easier to use.

Custer Interchange

Currently, there are no existing or proposed parks along Custer Avenue or near the proposed new interchange. Access to facilities by pedestrians and bicyclists would be improved due to the proposed pedestrian/bicyclist facilities included in the new interchange design and street widening. In addition, access to recreational facilities east of Helena will be improved with this new interchange.

5.3.19.2 Mitigation

There are no direct impacts, only indirect benefits to parks and recreation, and therefore no mitigation measures are required.

5.3.20 Construction

5.3.20.1 Impacts by Location

The contractor would determine construction methods during or after development of the final construction plans. In general, highway construction could likely involve the following types of action: bridge reconstruction/widening/ demolition, excavation and grading, utility relocations, placement of retaining walls, storm sewers and pavement. Sequencing of construction projects and the overall timeframe of

construction have not been determined and would be based upon minimization of construction impacts, funding constraints, and coordination between MDT and local communities.

This section discusses construction impacts that may occur with the Preferred Alternative. Construction along I-15, reconstruction of three existing interchanges, construction of two new interchanges, and the construction of various supporting elements present the potential for decreased mobility during construction, dust, noise, runoff, traffic congestion, temporary access restrictions, and visual intrusions to motorists and residents. Additionally, construction presents the potential for the accidental spill of hazardous materials, such as fuel or oil.

The period of construction can be expected to last for many years. Due to the weather constraints, the heavy construction season generally runs from April 15 to November 15. Timing and availability of funds could result in the project being constructed in stages.

Montana City Interchange Improvements

Improvements to the Montana City interchange would include widening of the bridge across I-15 and the on- and off-ramps on the north side of the interchange. The construction activities required could include grading, paving, pile driving, and compaction. This would require detours and temporary interruption of traffic along I-15 and MT Highway 518. There may be a temporary increase in local fugitive dust emissions.

South Helena Interchange

Construction of a new South Helena interchange would require the re-alignment of the west side Frontage Road. The construction activities required to build a bridge over I-15 could include grading, pile driving, and compaction. There are few sensitive receptors in the area so noise or fugitive dust impacts would be expected to be minimal. There could be minor traffic impacts related to residential access southwest of the interchange and construction of the bridge over I-15.

West side Frontage Road

The construction activities associated with this supporting element could include grading, paving, and compaction. There are few receptors in the area so noise or fugitive dust impacts would be expected to be minimal. There could be minor traffic impacts related to residential access southwest of I-15 at Highway 282 in Jefferson County.

Broadway Underpass for Pedestrian and Bicycle Use

The construction activities required to build a pedestrian/bicycle underpass of I-15 at Broadway would include excavation, grading, compaction, and paving. This could

require construction phasing, staging areas, and temporary interruption of traffic along I-15. There are few receptors in the area so noise or fugitive dust impacts would be expected to be minimal.

Capitol Interchange Improvements

Improvements to the Capitol interchange would require construction phasing, staging areas, and detours, as well as temporary interruption of traffic along I-15, US 12, Prospect Avenue, 11th Avenue, Fee Street, and Colonial Drive. There may be temporary access restrictions to commercial properties in the northwest and southwest quadrants of the interchange. Retaining walls may need to be constructed at the interchange in order to keep the improvements within MDT right-of-way. This may cause noise and fugitive dust impacts to nearby businesses and residences in the northwest quadrant of the interchange.

The addition of auxiliary lanes on I-15 extending from the Capitol interchange to Cedar Street would require the reconstruction of the I-15 bridge over the railroad tracks. The construction activities required could include grading, pile driving, paving, and compaction. This may require construction phasing, detours, staging areas and temporary interruption of traffic along I-15, Cedar Street, US 12, and Airport Road. There would likely be noise and fugitive dust impacts to the businesses and mobile home park west of I-15, north and south of Cedar Street.

Cedar Street Widening

Increasing Cedar Street from three lanes to five would require construction phasing and temporary interruption of traffic along Cedar Street that could require detours. Access to businesses along Cedar Street may be temporarily impaired which could cause shoppers to go elsewhere. Revising driveway accesses and parking for businesses could also temporarily hinder access to businesses on Cedar Street. There may be a temporary increase in noise and local fugitive dust emissions. Once construction is finished, there would be no direct impacts.

Custer Interchange

A new interchange at Custer would include reconstruction of the bridge over I-15, the addition of auxiliary lanes extending south to the Capitol interchange, widening Custer Avenue to five lanes and re-alignment of the east side Frontage Road. The construction activities required to rebuild the bridge over I-15 at Custer Avenue could include grading, pile driving, and compaction. This would require construction phasing, detours, staging areas and temporary interruption of traffic along I-15, Custer Avenue, and Airport Road. There would likely be noise and fugitive dust impacts to the businesses on Custer Avenue between I-15 and N. Montana Avenue, and to the businesses west of I-15, north and south of Cedar Street.

Lincoln Road Interchange Improvements

Improvements to the Lincoln Road interchange would include bridge replacement and re-alignment of the irrigation canal. This would require construction phasing and temporary interruption of traffic along Lincoln Road. The construction activities required to replace the bridge over I-15 at Lincoln Road could include grading, pile driving, and compaction. There may be a resulting increase in local fugitive dust emissions. There are a few receptors in the area, but the noise impacts would not exceed or approach FHWA's NAC.

5.3.20.2 General Construction Impacts

Construction Impacts to Air Quality

Without mitigation, excavation, grading, and fill activities could increase local fugitive dust emissions. Fugitive dust is airborne particulate matter, generally of a relatively large particle size (greater than 100 microns in diameter). Because of the large size, these particles typically settle within 9 meters (30 feet) of their source. Smaller particles could travel as much as hundreds of meters (several hundred feet) depending on wind speed. Through the use of mitigation measures described below, fugitive dust emissions could be effectively controlled. Vehicle emissions from construction vehicles and from delayed traffic also would impact air quality on a short-term basis along the I-15 Corridor during construction activities.

Construction Impacts to Noise

Construction noise would present the potential for short-term impacts to those receptors located along the study area and along designated construction access and detour routes. Noise impacts would be expected to occur in or near areas where residents and/or lodging guests might be disturbed. The primary source of construction noise is expected to be diesel-powered equipment such as trucks and earth moving equipment. Pile driving is expected to be the loudest single construction operation at bridge and wall construction sites.

Construction Impacts to Water Quality

Construction activities have the potential to cause sediment erosion beyond natural conditions. Stormwater runoff and the deposition of sediments from a construction site present the potential for violations of water quality standards in adjacent waterways and groundwater. Without mitigation measures, stormwater runoff could cause erosion and sedimentation or transport spilled fuels or other hazardous materials. These potential impacts are important to note because the project crosses irrigation canals and much of the Helena Valley depends on groundwater. Specific water quality impacts related to construction activities also are described in the water quality section (Section 5.3.10).

Construction Impacts to Traffic

Construction delays are expected to create short-term impacts to local and regional traffic circulation and congestion. The traveling public and emergency service vehicles may experience delays, and study area residents may be inconvenienced. Reduced speed limits, short-term travel on unpaved surfaces, and temporary lane closures on I-15 could be expected during construction activities. Temporary lane closures and delays would place additional pressure on alternate routes, impact business access at a limited number of locations, and result in short-term economic impacts. Temporary lane closures may occur at various times throughout the day during construction.

Construction Impacts to Visual Quality

Short-term, construction-related visual impacts are likely to occur. These impacts include the presence of construction equipment and materials, temporary barriers, guardrail, detour pavement and signs, temporary shoring and retaining walls, lighting for night construction, and removal of vegetation.

5.3.20.3 Mitigation

Construction Mitigation Measures for Air Quality

The following measures will be reviewed to mitigate construction impacts on air quality and will be incorporated into the project as determined appropriate for use:

- ▶ Suppress dust through watering or dust palliative.
- ▶ Revegetate areas disturbed by clearing and grubbing activities.
- ▶ Minimize off-site tracking of mud and debris by stabilizing temporary construction access roads.

Construction Mitigation Measures for Noise

The following measures will be reviewed to mitigate noise due to construction and will be incorporated into the project as determined appropriate for use:

- ▶ Coordinate with MDT, the contractor, and residents or business owners to limit noise impacts to certain times of day.
- ▶ Minimize construction duration in residential areas, as much as possible.
- ▶ Avoid nighttime activities in residential areas, as much as possible.
- ▶ Re-route truck traffic away from residential streets, where possible.
- ▶ Combine noisy operations to occur in the same period.
- ▶ Conduct pile driving and other high-noise activities during daytime construction (generally 7am to 7pm), where possible.

When construction time is restricted to certain daytime hours, the overall duration of project construction would likely increase.

Construction Mitigation Measures for Water Quality

The following measures will be reviewed to prevent negative impacts to water quality and violation of water quality standards to waterways in the study area. Appropriate measures will be included in the construction special provisions and could also be requirements identified in the permitting process (see Section 5.3.21). All work in and adjacent to wetlands and water resources will follow state, federal, and local permit requirements.

- ▶ Implement temporary and permanent BMPs for drainage way protection and erosion and sediment control as required by local and state permitting requirements.
- ▶ Avoid indirect and temporary impacts to wetlands or other areas of important habitat value in addition to those impacted by the project itself.
- ▶ Temporary and permanent BMPs may be required as mitigation along Custer Avenue to prevent erosion and sedimentation in the wetlands on the north and south side of the street between N. Montana Avenue and I-15 and to prevent spilled fuels or other hazardous materials from entering the wetlands.
- ▶ Coordination with local water districts to ensure water flow in the canal will be uninterrupted during construction at Lincoln Road. Temporary and permanent BMPs may be required along the canal to prevent erosion and sedimentation caused by stormwater runoff and to prevent spilled fuels or other hazardous materials from entering the canal.

Construction Mitigation Measures for Traffic Control

The following measures will be reviewed to minimize impacts to traffic circulation during construction and will be incorporated into the project as determined appropriate for use:

- ▶ Develop traffic management plans.
- ▶ Coordinate with emergency service providers to minimize delays and ensure access to properties.
- ▶ Maintain traffic flow during peak travel times by minimizing lane closures, if possible.
- ▶ Coordinate detour routes to avoid overloading local streets with detour traffic, where possible.
- ▶ Maintain access to local businesses and residences.

- ▶ Use signage, T.V. and radio announcements to announce and advertise timing of road closures.
- ▶ During peak travel times, keep as many lanes as possible open by temporarily shifting lanes within the existing framework of the roadway.
- ▶ Develop detour routes for potential nighttime closures of I-15 and arterial roadways.

Construction Mitigation Measures for Visual Quality

Mitigation measures for construction-related visual impacts will be reviewed and incorporated into the project as determined appropriate for use:

- ▶ Store equipment and materials in designated areas only.
- ▶ Remove any unused detour pavement or signs.

5.3.21 Permits

Because no water resources are directly impacted by the Preferred Alternative, a 124SPA Stream Protection Permit and Section 318 authorization are not needed. The following permits will be acquired prior to any relevant disturbance:

- ▶ A weed control plan approved by Lewis & Clark and Jefferson counties.
- ▶ The Preferred Alternative may require the following permits under the Clean Water Act (33 U.S.C. 1251-1376):
 - ◇ A *Section 402/* MPDES permit from the Montana Department of Environmental Quality's Permitting and Compliance Division. A Notice of Intent (NOI) for Stormwater Discharges under the MPDES and a General Permit (MTR 100000, effective June 8, 2002) will be required with DEQ for the control of water pollution for both specific and non-point sources.

The goal of the MPDES regulation program (ARM 16.20.1314) is to control point source discharges of wastewater such that water quality of the receiving streams is protected. All point sources of wastewater discharge are required to obtain and comply with MPDES permits. Any interchange construction project would typically require coverage under the MPDES "General Permit for Stormwater Discharges Associated with Construction Activity." This permitting process would serve only as a notice of intent to discharge, rather than a submittal for agency review or approval of a Stormwater Pollution Prevention Plan (SWPPP).

- ◇ A *Section 404* permit from the U.S. Army Corps of Engineers (for filling in jurisdictional wetlands or Waters of the U.S.). At this time, no jurisdictional wetlands are anticipated to be impacted.

The contractor will be required to exercise reasonable precautions during construction to prevent pollution of all waters located in the study area. The contractor also will be required to meet the requirements of the applicable regulations of the MFWP, DEQ, and other local, state, or federal regulations for the prevention or abatement of water pollution. These include the applicable regulations under the Clean Water Act of 1987 as well as the Montana Environmental Policy Act.

The Preferred Alternative requires the following permit for air quality from the DEQ:

- ▶ Air and Waste Management Bureau, asphalt plant and crusher permit

The Preferred Alternative may require the following permits, if applicable, for relocation of utilities, from the Montana Department of Transportation's Butte and Great Falls Districts:

- ▶ RW131 Permit for utilities located in the right-of-way
- ▶ RW20 Permit for encroachment in the right-of-way
- ▶ RW20S Permit for attachment of utilities to structures
- ▶ RW20A Environmental Checklist required for any projects not highway related
- ▶ Approach Permit for access to interstate

5.3.22 Relationship Between Local Short-term Uses of the Environment and the Maintenance and Enhancement of Long-term Productivity

Local short-term uses of the environment that would occur with the Preferred Alternative are:

- ▶ Disruptions in traffic and economic conditions for businesses during construction. Retail sales generated from construction workers would partially offset the economic disruptions.
- ▶ Increases in noise and air pollution during construction
- ▶ Vegetation would be lost due to construction clearing and grubbing
- ▶ Loss of wetlands and wildlife habitat
- ▶ Some wildlife would be displaced during construction

Long-term productivity that would be maintained or enhanced by the Preferred Alternative includes:

- ▶ Long-term improved safety and mobility
- ▶ Long-term replacement and/or reconstruction of aging infrastructure
- ▶ Long-term improved use of energy for vehicular fuel consumption
- ▶ Long-term enhancement of traffic capacity
- ▶ Long-term replacement of wetland values lost
- ▶ Long-term improvements in economic conditions by improved access and/or mobility
- ▶ Long-term improvement in property value due to improved access

5.3.23 Irreversible and Irretrievable Commitment of Resources

Implementation of the Preferred Alternative would involve a commitment of a range of natural, physical, human and fiscal resources. Land that would be used in the construction of the Preferred Alternative would be considered an irreversible commitment of resources, since it is unlikely that this land would ever be converted to another use.

Considerable amounts of fossil fuels, labor and construction materials, such as cement and aggregate, would be irretrievably expended in the construction of the Preferred Alternative. In addition, considerable amounts of labor and natural resources would be used in the fabrication and preparation of construction materials. These materials generally are not retrievable. However, at this time they are not in short supply and their use would not have an adverse effect upon continued availability of these resources. Construction would also require a substantial expenditure of state and federal funds, which are not retrievable and would require allocation of funds that could not be used by any other project.

The removal of vegetation for construction of the roadbed and interchanges would result in an irretrievable loss of vegetation from the study area.

The commitment of these resources would be based on the concept that residents in the immediate areas, region, and state would benefit by the improved quality of the transportation system. Benefits would include improved accessibility and safety, savings in travel time, and greater availability of quality services. The benefits are anticipated to outweigh the commitment of these resources.

5.4 Alternative 2

Since the Preferred Alternative and Alternative 2 have many improvements in common, the difference being the location of the northern interchange (Forestvale with Alternative 2 and Custer with the Preferred Alternative) and the number and length of auxiliary lanes, only those differences in impacts and mitigation are discussed for Alternative 2 in the following sections. For the impacts associated with the South Helena interchange, Capitol interchange improvements, Montana City interchange improvements, west side Frontage Road, Broadway Underpass for pedestrian and bicycle use, Cedar Street widening, and Lincoln Road interchange improvements see the discussion for each resource in Section 5.3. These sections are referenced in each resource discussed below. In addition, the discussion on Custer Avenue in Section 5.3 does not apply to Alternative 2.

5.4.1 Land Use

5.4.1.1 Impacts

The land use impacts are similar to the Preferred Alternative (see Section 5.3.1) except as follows:

Forestvale Road

Currently the city of Helena or Lewis & Clark County does not zone the land adjacent to the proposed Forestvale interchange. The Forestvale interchange area is located within a designated Transition Area by Lewis & Clark County. Transition Areas could be targeted for future investment in capital facilities if the city of Helena takes over responsibility for services in designated Urban Areas, however providing these facilities is currently beyond the 20-year planning horizon. Land that is currently undeveloped near the Forestvale interchange would have a greater likelihood of being developed in the near term with this alternative. Given that the area is not zoned it is likely that commercial, residential and supportive development may occur in the area, but would require approval (i.e., building permit, well/septic permit, etc.) from the appropriate jurisdiction. These types of development would change the current rural land use character.

Based on current level of design, the I-15 auxiliary lanes would have no direct or indirect impact on land use.

5.4.1.2 Mitigation

See Section 5.3.1.2.

5.4.2 Seismic Considerations

5.4.2.1 Impacts

Seismic impacts to structures as a direct or indirect result of construction of the project are similar to the Preferred Alternative (see Section 5.3.2).

There is a potential for impacts as a result of existing seismic conditions to structures associated with Alternative 2. The Forestvale interchange appears to be in an area with high susceptibility to liquefaction due to the proximity of Tenmile Creek and Lake Helena. Additional geotechnical investigations should accompany final design.

5.4.2.2 Mitigation

See Section 5.3.2.2.

5.4.3 Farmland

5.4.3.1 Impacts

Impacts to farmland are similar to the Preferred Alternative (see Section 5.3.3) except as follows:

Alternative 2 would directly impact a total of approximately 16 hectares (40 acres) of Prime or Unique Farmland, Farmland of Statewide Importance, and Farmland of Local Importance located near the South Helena interchange, the west side Frontage Road, the proposed Forestvale interchange and the Lincoln Road interchange. Of this total, approximately .10 hectare (.24 acre) is Prime or Unique Farmland at the proposed Forestvale interchange.

If conversion of farmland occurs in the study area because of new residential or commercial development, Alternative 2 has the potential to indirectly impact Farmland of Prime, Statewide Importance, and/or Local Importance.

5.4.3.2 Mitigation

See Section 5.3.3.2.

5.4.4 Social

5.4.4.1 Impacts

Social impacts are similar to the Preferred Alternative (see Section 5.3.4) except as follows:

The new Forestvale Road would be adjacent to existing residences between N. Montana Avenue and I-15, thus bringing traffic through an area where there is virtually none under the No-Action Alternative. Alternative 2 would provide relief from congestion, improve safety and crash issues, provide safe crossing facilities for pedestrians and bicyclists, and improve emergency access and response time throughout the study area (see Chapter 4.0). Alternative 2 would provide safer, more efficient and convenient travel for groups and individuals traveling to schools, recreation areas, churches, businesses, police, fire protection, and social activities. New highway access would improve emergency response time from the West Helena Main Fire Station, located in the southwest quadrant of the proposed Forestvale interchange.

Indirectly, Alternative 2 may cause a shift in the patterns of future development, thereby causing a shift in where future community facilities may be located (see Section 3.2.2.2). Connectivity between central and northern neighborhoods and current and future community facilities would be improved, with more future development likely to occur at Forestvale in the north. However, Alternative 2 may make it more attractive for future community facilities to locate north of Helena as projected by the Land Use Advisory Group. The area directly west of and including the Forestvale interchange is designated as a Transition Area for future development and could be targeted for future capital infrastructure improvement investments, such as sewer and water, beyond the 20-year planning horizon. In addition, the potential shift in land use associated with the Forestvale interchange may be hindered by environmental constraints, such as water quality issues associated with water and wastewater treatment systems.

5.4.4.2 Mitigation

See Section 5.3.4.2.

5.4.5 Environmental Justice

5.4.5.1 Impacts

Direct impacts associated with the construction of the Forestvale interchange under Alternative 2 could include increased congestion and noise levels on the proposed two-lane Forestvale Road. The upgraded Forestvale Road would provide access to the new interchange, and could result in temporary construction-related impacts near the construction locations. Potentially, noise and air quality impacts could result with increased traffic levels. Impacts to low-income households due to changes in air quality resulting from increased vehicle emissions, and/or changes in noise levels could potentially be associated with the Forestvale Road extension under Alternative

2; however, every effort would be made to avoid and minimize impacts in this area. These impacts are not disproportionate to minority and/or low-income populations.

Direct impacts in the form of improvements at the Forestvale Road interchange include pedestrian and bicycle accommodations. The bridge planned to cross and interchange with I-15 is proposed to include a sidewalk and shoulder area for pedestrian and bicycle access, thus improving and increasing the current alternative mode opportunities for low-income populations in the Forestvale Road area. Access improvements to I-15 could directly reduce the amount of traffic, congestion, and noise along N. Montana Avenue by dispersing traffic onto I-15 as well. Likewise, direct impacts resulting from access improvements could translate into an increase in safety levels for both local users and emergency vehicles. Emergency vehicle response times could improve as a result of an interchange at Forestvale Road.

Measuring the impacts of Alternative 2 on housing and property values for low-income households is difficult to assess. Indirectly, many of the benefits associated with improvements at Forestvale Road could potentially increase the value of properties in the area as improvements to access and safety are implemented. Alternative 2 would have the most influence in shifting future development patterns and growth in a northerly direction along the I-15 Corridor, potentially having a positive, indirect impact on future property values as well. These benefits, coupled with the fact that the area around Forestvale is within a designated Transition Area for future development, could result in potential increases in property values as improvements are directed to this area. Conversely, this could result in an increase in growth to these neighborhoods and cause higher rents and property taxes for minority persons. However, growth could be limited in this area due to the immediate lack of current infrastructure, and environmental constraints limiting on-site water and septic systems.

Short-term construction related impacts could restrict access near the proposed construction locations, resulting in delays or increased travel times. Emergency access would be maintained at all times.

5.4.5.2 Mitigation

See Section 5.3.5.2.

5.4.6 Right-of-Way and Utilities

5.4.6.1 Impacts

Based on conceptual design, the total approximate right-of-way impacts that may be associated with the construction of Alternative 2 are 60 parcels. Right-of-way impacts are similar to the Preferred Alternative (see Section 5.3.6) except as follows:

Forestvale Interchange

MDT already owns the right-of-way required for the interchange and Forestvale Road. This alternative requires one auxiliary lane in each direction between Capitol and Forestvale (on the inside), one auxiliary lane between the Capitol and Cedar ramps (on the outside), widening the culvert for the Helena Valley Irrigation Canal located north of Custer, and widening the bridges over Tenmile Creek. Approximately 10 parcels east and west of I-15 may be required for these improvements. Final right-of-way impacts will be determined during final design.

5.4.6.2 Mitigation

See Section 5.3.6.2.

5.4.7 Economic

5.4.7.1 Impacts

Economic impacts are similar to the Preferred Alternative (see Section 5.3.7) except as follows:

Due to improved access and mobility, Forestvale would be expected to enhance the economic condition of the study area in the north. The area around Forestvale Road was identified as a Transition Area by Lewis & Clark County and city of Helena based on the assumption that an interchange was to be constructed at Forestvale Road following the 1992 EIS. Commercial and economic development may occur in areas designated as Transition Areas for future infrastructure expansion beyond the 20-year planning horizon, thus requiring the expenditure of funds not programmed or anticipated at the present time. Indirectly, this alternative would improve connectivity to most development centers, thereby improving access to these businesses.

5.4.7.2 Mitigation

See Section 5.3.7.2.

5.4.8 Air Quality

5.4.8.1 Impacts

Air quality impacts are similar to the Preferred Alternative (see Section 5.3.8) except as follows:

Alternative 2 would result in a 15.5% increase in VMT on the interstate, but a decrease of VMT on arterial and collector roads, when compared to the No-Action Alternative. Alternative 2 is estimated to increase overall VMT in comparison to the No-Action Alternative by 0.1%. An increase in VMT will increase all mobile source pollutants. Interstate VMT results in reduced PM₁₀ emissions compared to arterial or collector VMT.

Vehicle hours of travel are expected to decrease by 1.6%, which results in reduced CO and HC emissions. This minimal decrease will likely be offset by a more noticeable increase in VMT, which will increase all mobile source pollutants.

5.4.8.2 Mitigation

See Section 5.3.8.2.

5.4.9 Noise

5.4.9.1 Impacts

Noise impacts for Alternative 2 are similar to the Preferred Alternative (See Section 5.3.9) except as follows:

The model results summarized in **Table 5-4** show that four receptor locations in the Forestvale noise model receive noise impacts under the Year 2025 proposed build scenario. **Figure 5-1** illustrates the general locations of these receptors. Along with the 15 receptors expected to be impacted by both the Preferred Alternative and Alternative 2, Alternative 2 would impact a total of 19 receptors. Receptors R1, R2, and R3 (Zone A on **Figure 5-1**) represent the front row residential developments located just southeast of the Forestvale Road/N. Montana Avenue intersection. An impact is predicted to occur at each of these locations. Receptors R1 and R3 both approach or exceed the FHWA NAC of 67.0 dBA while Receptor R2 receives a substantial increase in noise levels of greater than 13 dBA.

Table 5-4
Alternative 2 Existing and Future Noise Levels
at Impacted Receptors (Peak-Hour)

| Location | Noise Receptor ID | Existing Conditions Year 2000 Modeled (dBA-Leq) | No-Action Conditions Year 2025 (dBA-Leq) | Build Conditions Year 2025 (dBA-Leq) | Applicable FHWA NAC (dBA-Leq) |
|-----------------|-------------------|---|--|--------------------------------------|-------------------------------|
| Forestvale Road | R1 | 55 | 61 | 67 | 66 |
| Forestvale Road | R2 | 49 | 56 | 66 | 66 |
| Forestvale Road | R3 | 50 | 56 | 66 | 66 |
| Forestvale Road | R6 | 64 | 70 | 73 | 66 |
| Custer Avenue | NNE1 | 65 | 69 | 69 | 66 |
| Cedar Street | SSW7 | 66 | 68 | 71 | 66 |
| Cedar Street | SSW9 | 67 | 69 | 72 | 66 |
| Cedar Street | SSW10 | 68 | 70 | 73 | 66 |
| Cedar Street | SSW11 | 67 | 70 | 72 | 66 |
| Cedar Street | SSW12 | 63 | 65 | 68 | 66 |
| Cedar Street | SSW13 | 68 | 70 | 73 | 66 |
| Cedar Street | SSW14 | 69 | 72 | 74 | 66 |
| Cedar Street | SSW15 | 64 | 67 | 69 | 66 |
| Cedar Street | SSW16 | 70 | 73 | 74 | 66 |
| Cedar Street | SSW17 | 64 | 67 | 68 | 66 |
| Cedar Street | SSW18 | 70 | 72 | 74 | 66 |
| Capitol | NW6 | 63 | 69 | 66 | 66 |
| Capitol | NW8 | 66 | 69 | 68 | 66 |
| Capitol | NW9 | 69 | 70 | 70 | 66 |
| Capitol | SW3 | 67 | 70 | 71 | 66 |

Receptor R6 (Zone B on **Figure 5-1**) is located south along I-15 in the Treasure State Acres subdivision, which was built after I-15 was constructed and represent the front row of homes adjacent to I-15. Existing conditions at this location are below the FHWA NAC by only 2 dBA. Under the Year 2025 Alternative 2, an impact is projected to occur as noise levels at this location exceed the NAC. However, it is important to note that under the Year 2025 No-Action Alternative, noise levels also exceed the NAC. The difference in noise levels between Alternative 2 and the No-Action Alternative is approximately 3 decibels.

5.4.9.2 Mitigation

See Section 5.3.9.2 and as follows:

- ▶ Mitigation for Receptors R1, R2 and R3 (see **Figure 5-1**) is not recommended. A noise barrier at this location, though feasible, is not considered reasonable

because it would exceed the MDT cost-effective index. However, mitigation will be considered if final design changes significantly compared to conceptual design.

- ▶ Mitigation for the residences located west of I-15 in the Treasure State Acres (R6) subdivision is not recommended. A noise barrier at this location, though feasible, is not considered reasonable because the difference in noise levels between the No-Action Alternative and the Preferred Alternative is approximately 3 decibels. MDT guidelines suggest that a difference of less than three decibels indicates a noise barrier may not be reasonable. For this reason, and because this subdivision was developed well after the construction of the interstate, no mitigation is proposed for these residences.

5.4.10 Water Resources and Water Quality

5.4.10.1 Impacts

Impacts to water resources and water quality are similar to the Preferred Alternative (see Section 5.3.10) except as follows:

Surface Waters

The segment of the I-15 auxiliary lanes between Forestvale and Cedar would require the widening of the culverts for the Helena Valley Irrigation Canal and the bridges over Tenmile Creek. This could result in a direct but temporary impact to surface water resources and their water quality. However, initial design considerations have determined that the bridge widening construction could occur with minimal impacts to Tenmile Creek. No channel modifications would be required. Over time, and due to the proximity of the interchange to Tenmile Creek, indirect impacts could be associated with an increase of impervious surface area and additional runoff from the Forestvale interchange.

Alternative 2 could also result in new direct impacts to the water quality of Tenmile Creek. This stream is located just south of the proposed Forestvale interchange. The proposed Forestvale interchange improvements would add an additional 4 hectares (9 acres) of paved surface area in a location that is predominantly open land. An increase in impervious surface area can be related to an increase in the amount of highway runoff into surrounding waters. This could directly impact the water quality of Tenmile Creek by increasing sediment loads, turbidity, and the accumulation of metals and other roadway pollutants, instead of filtering slowly into surface waters and/or recharging groundwater resources.

Increases in turbidity could eventually lead to aquatic habitat impairment and changes in the physical and hydrologic characteristics of the stream. If not prevented, sediment can literally fill a riverbed with sand, and in some cases alter its

physical capacity to convey water. Furthermore, sediment deposits can smother eggs and larvae of benthic and other small aquatic life once settled.

The construction activity in the area of the culvert crossing of the Helena Valley Irrigation canal would require excavation and grading to place the extended culvert. This could temporarily affect water quality depending on when construction occurred.

The increased amount of impervious surface area associated with the combination of Alternative 2 improvements could result in impacts to groundwater resources as well as surface water resources. A total of approximately 14 hectares (35 acres) of additional impervious surface would be added, including auxiliary lanes (see Section 5.3.10).

Groundwater

Any future new development shifted to the Forestvale interchange area would likely obtain water from new wells installed predominantly in the Helena Valley-Fill Aquifer. The Helena Valley-Fill Aquifer has the potential to produce large capacity wells with discharge in excess of 1,000 GPM. However, increased development in the area of the Forestvale interchange may also extend to the west to include areas underlain by the Scratchgravel Hills aquifer, and to the north to include the southern portion of the North Hills area. It appears there would likely be adequate groundwater supply to serve new wells necessitated by additional development in the Forestvale interchange area.

In the North Hills area, a temporary Controlled Groundwater Area designation has been approved. If some additional development were shifted to the North Hills area due to Alternative 2 (or any other alternative for that matter), it is likely that any new well, regardless of its intended use rate (including wells producing less than 35 GPM and less than 10 acre-feet a year), would be required to obtain a Beneficial Water Use Permit (and comply with all criteria of 85-2-311 MCA).

Alternative 2 is not expected to cause adverse impact to water availability or supply in the Forestvale interchange area, and there appears to be potential to site new supply wells to serve new development.

The primary potential for new development in an area to impact groundwater quality is from the discharge of septic effluent from sewage drainfields. New development in the Forestvale interchange area would likely be primarily served by on-site sewage treatment systems and associated drainfields. The Montana Non-degradation law prohibits drainfield effluent from exceeding a level of 5 mg/l nitrate at the end of the mixing zone (7.5 mg/l for level two treatment systems), and prohibits phosphorous to "break through" to the nearest surface water body within 50 years. Montana's Non-

degradation law defines impacts that comply with the standards described above as "Non Significant."

In general, nitrate levels in the Forestvale interchange impact area appear to be below the Non-degradation standard. Within the study area, in areas that already exceed the Non-degradation standard, no additional on-site sewage treatment systems would be allowed, and developers would be required to either connect to the municipal system, or locate their development elsewhere. In most areas, nitrate levels are well below the Non-degradation standard, and additional development capacity remains. The Montana Non-degradation law is vigorously and effectively enforced by MDEQ. Therefore, any new development caused by Alternative 2 utilizing on-site sewage treatment systems and associated drainfields would have a "Non Significant" impact on water quality.

5.4.10.2 Mitigation

See Section 5.3.10.2 and as follows:

- ▶ Implementation of BMPs to protect the 303(d)-listed Tenmile Creek from additional impacts.

5.4.11 Wetlands

5.4.11.1 Impacts

Impacts to wetlands are similar to the Preferred Alternative (see Section 5.3.11) except as follows:

Forestvale Interchange

Approximately 0.2 hectare (0.5 acre) of Wetland 6 (non-jurisdictional irrigation canal, which would be relocated) and 2 hectares (4.9 acres) of Wetland 12 [approximately 5 hectares (12 acres) of isolated non-jurisdictional gravel pit] would be partially filled in conjunction with the Forestvale interchange construction. Wetland 12 is rated as a Category II wetland, and is the highest-rated wetland of all delineated along the I-15 Corridor, primarily due to vegetation diversity and wildlife habitat. This wetland site could potentially be expanded to add more wetland mitigation acreage.

Indirect impacts with Alternative 2 would occur in conjunction with direct loss at Wetland 12. The direct and indirect wetland impacts, as a result of potential future adjacent interchange development, could reduce the overall habitat value of remaining approximate 2.8 hectares (7 acres). Additionally, minor, temporary sedimentation at Wetland 6 and Wetland 12 during precipitation events may be associated with construction of the Forestvale interchange and canal relocation until exposed fill slopes are stabilized.

Wetland 10 north of Custer at the irrigation canal would incur additional impacts as part of the culvert extension for Alternative 2. Approximately 22 square meters (240 square feet) would be impacted at Wetland 10.

With Alternative 2, land use growth may shift north to take advantage of improved access provided by a new Forestvale interchange. Based on a sensitivity analysis described in Section 3.2.2.2, a new interchange at Forestvale (location in a Transition Area) may have more influence on the shifting of new land use growth, since it is further north than the Custer interchange. Supportive commercial development, such as gas stations, may occur adjacent to the new interchange.

This alternative is not expected to result in substantive indirect impacts to wetlands in association with related development. Few wetlands, primarily canals and drainage ditches, occur in areas of projected development north of the proposed Forestvale interchange.

Table 5-5 identifies the wetland impacts by category and wetland type.

Table 5-5
Direct Wetland Impacts with Alternative 2

| Wetland Type or Category | Jurisdictional Impacts hectare (acre) | Non-Jurisdictional Impacts hectare (acre) |
|---------------------------------|--|--|
| Scrub-Shrub | 0.0 | 0.8 (2.0) |
| Emergent | 0.0 | 1.02 (2.54) |
| Forested | 0.0 | 0.3 (1.0) |
| Total Wetland Type | 0.0 | 2.12 (5.54) |
| Category I | 0.0 | 0.0 |
| Category II | 0.0 | 2 (4.9) |
| Category III | 22 square meters (240 square feet) | .04 (<0.1) |
| Category IV | 0.0 | 0.22 (0.54) |
| Total Wetland Category | 22 square meters (240 square feet) | 2.12 (5.54) |
| South Helena Interchange | 0.0 | 0.0 |
| Capitol Interchange | 0.0 | 0.0 |
| Forestvale Interchange | 22 square meters (240 square feet) | 2.1 (5.5) |
| Montana City Interchange | 0.0 | 0.0 |
| West side Frontage Road | 0.0 | 0.0 |
| Broadway Underpass | 0.0 | 0.0 |
| Cedar Street Widening | 0.0 | 0.0 |
| Lincoln Road Interchange | 0.0 | 0.02 (0.04) |
| Total Estimated Impacts | 22 square meters (240 square feet) | 2.12 (5.54) |

5.4.11.2 Mitigation

See Section 5.3.11.2, Section 5.3.11.3, Section 5.3.11.4 and Section 5.3.11.5.

5.4.12 Vegetation, Wildlife, and Aquatic Resources

5.4.12.1 Impacts

Impacts to vegetation, wildlife, and aquatic resources are similar to the Preferred Alternative (see Section 5.3.12) except as follows:

Forestvale Interchange

Direct impacts at the Forestvale interchange would occur in conjunction with direct loss of wildlife habitat at Wetland 12. Loss of approximately 2 hectares (4.9 acres) of this wetland, along with adjacent interchange development, would reduce the habitat value of the approximate 5-hectare (12-acre) wetland site.

With Alternative 2, new development may shift to take advantage of improved access provided by a new Forestvale interchange (located in a designated Transition Area). Most new development may concentrate near the interchange. Based on a sensitivity analysis, a new interchange at Forestvale may have more influence on the shifting of new land use growth, since it is further north than the Custer interchange. Supportive commercial development, such as gas stations, may occur sooner and adjacent to the new interchange.

Such increased development would proportionally decrease available wildlife habitat that currently exists in undeveloped areas in this northern portion of the study area. Noxious weeds may establish in disturbed areas until seeded vegetation establishes. Affected wildlife species could include white-tailed deer, red fox, coyote, and other relatively common species. Associated traffic increase in and through the area would incrementally increase the difficulty for deer and other species crossing I-15 Corridor in the general Tenmile Creek area. However, the Tenmile Creek bridge would remain and appears to facilitate some wildlife movement beneath I-15. The Tenmile Creek bridge is proposed to be widened to accommodate the addition of auxiliary lanes in this area.

Depending on final design, the additional auxiliary lanes could result in minor direct impacts to Tenmile Creek where new bridge segments may be required in association with lane addition. Initial design considerations have determined that bridge-widening construction could occur without impacting the creek bed. Abutment walls could be placed and the deck constructed with minimal impacts to the Waters of the U.S. Temporary sedimentation may be associated with construction of the bridge segments, and also with lane construction until exposed fill slopes are stabilized.

The addition of more traffic lanes between the Capitol interchange and Forestvale Road would incrementally increase the difficulty for deer and smaller wildlife species to cross the highway. Near Tenmile Creek, relatively few crossings are attempted (as evidenced by mortality data), and the bridge over the creek would be perpetuated, facilitating a degree of sub-highway animal passage. However, animal-vehicle collisions would likely increase throughout the corridor as animals would require more time to cross the additional traffic lanes.

A few black-tailed prairie dog towns, an ESA-candidate species and MNHP-listed animal species of concern, are scattered through the north Helena Valley, most of which have been subject to subdivision or other forms of development. An active town approximately 1.5 kilometers (0.9 mile) north of the Lincoln interchange on the east side of the highway could be affected should development occur in this area. A bald eagle nest and great blue heron rookery occur at Lake Helena, but are unlikely to be affected by development resulting from I-15 improvements. No MNHP-listed plant species of concern are known to occur in this portion of the study area and substantive indirect impacts to such species are not expected.

This alternative is not expected to result in substantive indirect impacts to aquatic resources in association with the Forestvale interchange as few, primarily canals and drainage ditches, occur in areas of projected development north of the proposed Forestvale interchange. Minor irrigation ditch relocation would occur in association with the Forestvale interchange construction. No impacts at Silver Creek or ditches in the immediate vicinity would occur.

Minor, temporary sedimentation at Tenmile Creek and Wetland 6 (irrigation canal) during precipitation events may be associated with construction of the Forestvale interchange and canal relocation until exposed fill slopes are stabilized. No substantive indirect impacts to spawning for any fish species are anticipated at Tenmile Creek, especially if construction were to occur after mid-summer when the stream is dewatered.

5.4.12.2 Mitigation

See Section 5.3.12.2.

5.4.13 Floodplains

5.4.13.1 Impacts

Direct impacts caused by Alternative 2 include temporary construction-related impacts at Forestvale Road along the fringe of the 100-year floodplain on Tenmile Creek. The widening of the I-15 bridges over Tenmile Creek may encroach on the floodplain but would not restrict the current flows since the same bridge length would

be maintained. In addition, the relocation of the east side Frontage Road would cause the relocation of the irrigation ditch, resulting in minor encroachment of approximately 0.1 hectare (0.25 acre) to the 100-year floodplain.

Potential indirect impacts to the 100-year floodplain as a result of this alternative include new growth occurring near Tenmile Creek and Silver Creek floodplains. However, development in or near floodplains is regulated by FEMA and the County.

5.4.13.2 Mitigation

To mitigate the direct impacts for Alternative 2, a floodplain development permit would be required from Lewis & Clark County for the floodplain encroachment associated with the construction of the Forestvale interchange.

BMPs will be followed to reduce any temporary or permanent impacts to the Tenmile Creek 100-year floodplain as a result of the transportation improvements evaluated in this document. Specific BMPs to be used in the study area would be determined at the time of final design.

There were no indirect impacts to the floodplain identified, and therefore, no mitigation required.

5.4.14 Wild and Scenic Rivers

Since no wild or scenic rivers exist in the study area, no direct or indirect impacts would occur. Therefore, no mitigation is required.

5.4.15 Threatened or Endangered Species

5.4.15.1 Impacts

Impacts to threatened or endangered species are similar to the Preferred Alternative (see Section 5.3.15) except as follows:

With Alternative 2, land use growth may shift to take advantage of improved access provided by a new Forestvale interchange (located in a designated Transition Area). Most new development may concentrate near the interchange. Based on a sensitivity analysis, a new interchange at Forestvale may have more influence on the shifting of new land use growth, since it is further north than the Custer interchange. Supportive commercial development, such as gas stations, may occur sooner and adjacent to the new interchange.

Forestvale Interchange

The potential for direct impacts associated with this alternative are slightly higher than those associated with the Preferred Alternative due to the greater likelihood of bald eagle use near the proposed Forestvale interchange location and Tenmile Creek and the presence of black-tailed prairie dogs in the north Helena Valley. However, use of the project area by eagles for foraging or as a preferred foraging site is undocumented and uncertain. Implementation of this alternative is still unlikely to result in substantive direct impacts to threatened or endangered species.

With Alternative 2, direct impacts at the Forestvale interchange would include direct loss of approximately 2 hectares (4.9 acres) of potential occasional bald eagle habitat at Wetland 12. This site may be incidentally used by transient bald eagles, but is not considered critical habitat. No impacts to nesting habitat would occur.

Construction activities during all seasons could conceivably temporarily disturb or displace (primarily) non-breeding eagles where the project is visible from foraging habitat. The areas and duration of disturbance would be relatively confined and undisturbed similar habitat for displaced birds is abundant in the surrounding area. No impacts to bald eagles would be anticipated.

Project-associated development within bald eagle nesting habitat at Lake Helena is unlikely to occur. Project-associated development adjacent to potential bald eagle foraging habitat along Tenmile Creek, adjacent to I-15, is unlikely to substantially affect occasional foraging due to the existing degree of human disturbance and availability of other suitable habitat in the area.

With the exception of the bald eagle nest adjacent to Lake Helena approximately 4 kilometers (2.4 miles) east of the Lincoln Road interchange and occasional bald eagle use along Tenmile Creek and ditches and canals in the north valley, no listed or proposed threatened or endangered species are known to occur in this portion of the study area.

5.4.15.2 Determination of Effect

The following determination of effect for threatened and endangered species was based on the preceding analysis. No formal determination of effect is rendered with respect to the black-tailed prairie dog as this species is not listed or proposed for listing as threatened or endangered. No formal determination of effect is needed for the mountain plover since it is no longer proposed for listing as of September 9, 2003.

Alternative 2 will **not affect** the listed threatened bald eagle or the Ute ladies' tresses orchid.

5.4.15.3 Conservation Measures

See Section 5.3.15.3.

5.4.16 Cultural Resources

5.4.16.1 Impacts

There would be no direct or indirect impacts to historical or archaeological sites with Alternative 2. Three historic properties would be affected by Alternative 2, but the effects would not be adverse (see Section 5.3.16 for a discussion of effects to historic resources).

5.4.16.2 Mitigation

See Section 5.3.16.2.

5.4.17 Hazardous Waste

5.4.17.1 Impacts

Impacts to hazardous waste are similar to the Preferred Alternative (see Section 5.3.17) except as follows:

There are no hazardous materials sites located within the area of construction disturbance for the improvements planned at the Forestvale interchange.

The addition of auxiliary lanes on I-15 extending from the Capitol interchange to Forestvale would require the reconstruction of the I-15 bridge over the railroad tracks.

The Helena Gun Club is located on the north side of Forestvale Road between N. Montana Avenue and I-15. Soils associated with a shooting range typically have elevated levels of lead. This site should not pose a threat since intrusive construction activities would be taking place south of the shooting range.

Indirect impacts could be caused by the potential shift in new commercial and residential development that would be supported at the Forestvale interchange and potential redevelopment in the vicinity of the Helena Gun Club. Implementation of the improvements could cause the listed hazardous waste sites to be encountered.

5.4.17.2 Mitigation

See Section 5.3.17.2.

5.4.18 Visual

5.4.18.1 Impacts

Visual impacts are similar to the Preferred Alternative (see Section 5.3.18) except as follows:

Forestvale Interchange

At the Forestvale interchange, widened turn lanes on N. Montana Avenue would require additional land being converted to roadway and loss of grassed areas and some open land. Relocation of the Frontage Road and irrigation canal on the east side of I-15 would include the loss of vegetation including trees and wetlands and additional open land being converted to pavement.

Direct impacts to visual quality would be caused by the new auxiliary lanes, as they would widen the existing I-15 cross section for each lane by 3 meters (10 feet), creating additional pavement. The existing bridges over the railroad would be replaced with new bridges. The development southwest of the railroad crossing would be affected most by the highway becoming closer. The bridges over Tenmile Creek would be widened for Alternative 2.

Visual conditions associated with supportive development and/or indirect development at South Helena, Forestvale interchange and along the west side Frontage Road could include commercial signs, additional paved areas for parking and/or circulation, landscaped area, utilities and lighting, varied architectural styles, building heights and colors and potential for varied commercial and residential developments. Examples of similar developed transportation corridors are depicted in Photo 5-1 and Photo 5-2.

5.4.18.2 Mitigation

See Section 5.3.18.2.

5.4.19 Parks and Recreation

5.4.19.1 Impacts

Impacts to park and recreational resources are similar to the Preferred Alternative (see Section 5.3.19) except as follows:

Sierra Park, located approximately 0.8 kilometer (0.5 mile) north of Forestvale Road, is the only park located near the proposed Forestvale interchange. The proposed Forestvale interchange ramps will avoid impact to this park.

5.4.19.2 Mitigation

See Section 5.3.19.2.

5.4.20 Construction

5.4.20.1 Impacts

Construction impacts are similar to the Preferred Alternative (see Section 5.3.20) except as follows:

To build the Forestvale interchange, the frontage road and the irrigation canal on the east side of I-15 would need to be realigned. This would require construction phasing and temporary interruption of traffic along the east side Frontage Road, but not on Forestvale Road, as it currently does not cross I-15. The construction activities required to build a bridge over I-15 at Forestvale could include grading, pile driving and compaction. This may result in an increase in local fugitive dust emissions to residents located near the proposed interchange and Forestvale Road. The existing Custer Avenue bridge could be maintained if the mainline I-15 lanes are shifted to the inside of I-15.

There would be temporary construction-related impacts along the fringe of the 100-year floodplain on Tenmile Creek.

5.4.20.2 Mitigation

See Section 5.3.20.3 and as follows:

- ▶ Coordination with local water/irrigation districts will be required to ensure water flow in the canal would be uninterrupted during construction.
- ▶ Temporary and permanent BMPs will be required along the canal and Tenmile Creek to prevent erosion and sedimentation caused by storm water runoff and to prevent spilled fuels or other hazardous materials from entering waterways.
- ▶ Mitigation will also be required to prevent the erosion and sedimentation of the nearby wetland at the northeast quadrant of the interchange.
- ▶ A floodplain development permit will be required from Lewis & Clark County.

5.4.21 Permits

The permits required for Alternative 2 are the same as with the Preferred Alternative with the addition of the following:

- ▶ Alternative 2 would be in compliance with the provisions for Water Quality under Section 75-5-401 (2), MCA for Section 318 authorizations for short-term turbidity problems and Stream Protection under 87-5-501 through 509, MCA, inclusive. This authorization should be obtained by the MDT contractor from the DEQ prior to the start of any highway construction.
- ▶ A 124SPA Stream Protection Permit would be required by the MFWP. This permit would be required depending upon planned highway improvements and the specific impacts to a stream. In Montana, proposed development activities (by governmental agencies) in or near streams that may affect the beds or banks are governed by the Montana Stream Protection Act. The MFWP administers this law, and its purpose is to preserve and protect fish and wildlife resources in their natural existing state.
- ▶ Alternative 2 would require a floodplain development permit from Lewis & Clark County for floodplain encroachment associated with construction of the Forestvale interchange.

It would be appropriate for MDT to work with MDEQ as it develops TMDLs and associated water quality restoration plans for Tenmile Creek.

5.4.22 Relationship Between Local Short-term Uses of the Environment and the Maintenance and Enhancement of Long-term Productivity

Impacts and productivity are the same as for the Preferred Alternative (see Section 5.3.22).

5.4.23 Irreversible and Irretrievable Commitment of Resources

Impacts are the same as for the Preferred Alternative (see Section 5.3.23).

5.5 Cumulative Impacts

This section addresses the cumulative impacts associated with the No-Action Alternative, the Preferred Alternative (Alternative 1), and Alternative 2 for transportation improvements along the I-15 Corridor from the Montana City interchange to the Lincoln Road interchange. A cumulative impact is "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions" (40 CFR 1508.7). This cumulative impacts analysis takes into account the past, present and future actions, regardless of responsible party in the study area along with the build

alternatives to determine the impacts to the environment as a result of all of these actions.

The methodology used for addressing the potential cumulative effects of the I-15 corridor project involved the following process steps:

- ▶ Identification of the significant cumulative effects issues associated with the project.
- ▶ Establishing appropriate geographic boundaries for the analysis.
- ▶ Establishing an appropriate time frame for the analysis.
- ▶ Identification of other actions affecting the resources, ecosystems and human communities of concern (i.e., the significant cumulative effects issues).

Developing this information for the cumulative effects analysis was accomplished as follows:

- ▶ **Expanded Scoping.** Various state and federal agencies were sent letters requesting formal scoping input as well as their participation in a project Interdisciplinary (ID) Team. Written and verbal responses were received from the following agencies:
 - ◇ U.S. Environmental Protection Agency
 - ◇ U.S. Fish and Wildlife Service
 - ◇ U.S. Army Corps of Engineers
 - ◇ Montana Department of Environmental Quality
 - ◇ Montana Historical Society
 - ◇ U.S. Forest Service

Copies of the response letters received are included in Volume 2, Appendix B.

The specific areas of concern analyzed for cumulative impacts were derived from these letters, scoping meetings, and discussion with the project Interdisciplinary Team (see Section 7.2.3 for further discussion of the role of the ID Team). All social, economic and environmental resources were considered before identifying the significant issues within the I-15 Corridor. The identified areas of particular concern within the I-15 project area are land use (growth), water resources and water quality, and ecological resources such as wildlife and wetlands.

- ▶ **Geographic Boundaries.** The geographic boundaries to be used for this cumulative impacts analysis were based on the identified resources of concern and the potential impacts that might occur to these resources under a build alternative. The boundaries are Lincoln Road on the north, the Montana City

interchange on the south and eight kilometers (five miles) to the east and west of I-15. This boundary takes into account the physical barrier of the surrounding mountains as well as identified planning area boundaries.

- ▶ **Time Period.** The timeframe for this analysis of cumulative impacts is approximately 40 years in the past based on available data concerning growth in the valley and the construction of I-15 through Helena. The present to future timeframe is to the year 2025, the planning horizon for this EIS.
- ▶ **Resource Data.** Data was collected for the resources of concern from readily available data sources for the Greater Helena Valley. These sources include: Lewis & Clark County, Jefferson County, city of Helena, Montana Department of Transportation, 1999 Helena Valley Wetland Mapping effort, groundwater reports developed by Joanna N. Thamke, 2000 and by Briar and Madison, 1992, and many direct contacts with planners, developers and realtors in the cumulative impacts study area.

The environmental impacts addressed in this section are those that could result from implementation of the project. The cumulative analysis addresses the “incremental impacts” of the proposed action related to the resources identified as significant issues for this project. To determine the impacts to the specific resources on a cumulative basis, a baseline condition is established. This baseline includes development from a specified period of time for past actions, added to present and reasonably foreseeable actions that are assumed for the No-Action condition. The impacts of the proposed transportation project are then added to this baseline as the incremental impacts of the project.

5.5.1 Reasonably Foreseeable Projects within the Study Area

Table 5-6, Table 5-7 and Table 5-8 include development, transportation, and infrastructure projects which are reasonably foreseeable, are identified in area plans, and are expected to occur regardless of proposed improvements to the I-15 Corridor. These projects include those that have been approved, are under construction or completed, as well as those that are known by planners or developers to be reasonably certain but which have not been approved or permitted as of May 2003.

The city of Helena and Lewis & Clark County have areas identified as future growth areas in their Growth Policy and Comprehensive Plans. Helena and Lewis & Clark County have Urban and Transition Areas and, additionally, Lewis & Clark County has Special Zoning Districts (see Section 3.2.2.2). These areas have experienced some new development; however, they have not reached build-out. As development fills in these areas, resources, such as water resources, natural vegetation and habitat, would be stressed.

Table 5-6
Reasonably Foreseeable Development Projects

| Project Name | Jurisdiction | Description | Use |
|----------------------------|--|---|-----------------------|
| Pioneer Village | City of Helena | North of Custer Ave between Green Meadow Drive and McHugh Lane. | Residential |
| Crystal Springs | City of Helena | North of Custer Avenue, east of Green Meadow Drive (120 home sites). Not yet permitted. | Residential |
| Fountain Court | City of Helena | N. Montana Avenue and 3 rd Street (18 units) | Residential |
| Reeder's Village | City of Helena | West Main Street near old Federal Building (65 lots). About ½ built out. | Residential |
| Reber PUD | City of Helena | Joslyn Street south of Hauser—older subdivision that is starting to build out. | Residential |
| West side of Helena | City/county | Area is starting to fill in. Some properties currently served by city water and sewer. Potential annexation area. | Residential |
| Skelton Addition | City of Helena | West side on N. Montana Avenue, north of Custer Avenue near Bob Wards. Some mixed-use with low-income units and medium density residential lots that would extend to McHugh Lane. | Residential |
| Residential Development | City of Helena | North of Custer Avenue east of McHugh Lane. Not yet permitted. | Residential |
| Home Depot | City of Helena | Potential location south of Custer Avenue/west of N. Washington Street (not yet approved). Area has potential for development. | Commercial |
| Power Townsend | City of Helena | Custer Avenue/N. Montana Avenue—planned expansion. | Commercial |
| Independent Record | City of Helena | New building at Cedar Street west of N. Washington Street. | Industrial |
| The Discovery Center | U.S. Forest Service/ Helena Forest Foundation | New Forest Service offices/educational campus. | Mixed-use |
| Montana Historical Society | Historical Society | Separate siting study for an 18,580-square-meter (200,000-square-feet) museum. | Museum |
| Redevelopment plans | City of Helena | Potential development of property in the vicinity of the Armory near Lyndale Avenue and Last Chance Gulch. | Office (zoned PLI) |

continued

Table 5-6 (continued)
Reasonably Foreseeable Development Projects

| Project Name | Jurisdiction | Description | Use |
|---|----------------------|--|----------------------------|
| Area near the base of the new water tank | City of Helena | Potential for residential development west of I-15 near Saddle Drive near the water tank. | Residential |
| Padbury Property | Lewis & Clark County | Potential for development east of I-15 and south of US 12. | R/C/ Mixed Use |
| Potential Residential/Office Development Area | City of Helena | Property west of I-15, east of Saddle Dr. and south of Shodaire. | Residential/ Office |
| Airport Area | City of Helena | Area around the airport, north of US 12, south of Custer Avenue and east of I-5 is a potential in-fill development area and for light industrial and commercial expansion of the existing industrial park. Airport itself also could have some growth and development. | Commercial/ Industrial |
| Area off of York Road | Lewis & Clark County | Area of potential growth. | Commercial/ Residential |
| East Helena | East Helena | Growth on the eastern boundary. | Residential/ Commercial |
| Great Northern Hotel | City of Helena | Last Chance Gulch and Lyndale. | Hotel |
| Fort Harrison Area | Lewis & Clark County | Potential annexation and development due to new sewer main extending from the City to Fort Harrison. Development expected to occur along the sewer main (city has an easement). | Residential |
| Overlook Development | Lewis & Clark County | Proposed development west of Granite Street near Kessler School, south of US 12 (58 residential lots and one large lot for multi-family units, office or further subdivision). Not yet approved. May be annexed by the city. | Residential |
| Montana City Plaza Minor Subdivision | Jefferson County | Prelim Plat Approval—five commercial lots | Commercial |
| Hance Minor Subdivision | Jefferson County | Final Plat Approval—two residential lots | Residential |
| Wahl Minor Subdivision | Jefferson County | Final Plat Approval—three residential lots | Residential |
| Pronghorn Hills Major Subdivision | Jefferson County | Final Plat Approval with Subdivision Improvements Agreement—26 residential lots | Residential |
| Glueckert Minor Subdivision | Jefferson County | Prelim Plat Approval—five residential lots | Residential |

continued

Table 5-6 (continued)
Reasonably Foreseeable Development Projects

| Project Name | Jurisdiction | Description | Use |
|---|---------------------|--|-------------|
| Redtail Meadows Minor Subdivision | Jefferson County | Final Plat Approval—five residential lots | Residential |
| Ellery Minor Subdivision | Jefferson County | Final Plat Approval—four residential lots | Residential |
| Red Cliff Estates Major Subdivision | Jefferson County | Prelim Plat Approval—26 residential lots | Residential |
| Vivrette Minor Subdivision | Jefferson County | Prelim Plat Approval—two residential lots | Residential |
| Flintlock Minor Subdivision | Jefferson County | Final Plat Approval—five residential lots | Residential |
| Lot 1A Ridgewood Estates Minor Subdivision | Jefferson County | Final Plat Approval—four residential duplexes | Residential |
| Southern Exposure Minor Subdivision | Jefferson County | Final Plat Approval—five residential lots | Residential |
| Stonebridge Major Subdivision | Jefferson County | Proposed—104 residential lots | Residential |
| Commercial development | Jefferson County | Proposed—between the Montana City interchange (NE corner) and the Montana City Grill | Commercial |
| A 270-acre plot ready to go for development | Jefferson County | N/A | N/A |

Table 5-7
Reasonably Foreseeable Transportation Projects

| Project Name | Jurisdiction | Description |
|--|---------------------|--|
| Custer Avenue Reconstruction (Washington Street to York Road) | City | Road Reconstruction. |
| N. Montana Avenue RR Grade Separation | City | Grade Sep/crossing at N. Montana Avenue. |
| N. Montana Avenue—Buffalo to Sierra (2003) | MDT | Add turn lane and reconstruct road to three lanes. |
| Capitol/I-15 interchange | MDT | Safety improvements – revise ramps. |
| Pedestrian Tunnel at I-15 | MDT | New pedestrian tunnel |
| N. Montana Avenue—north of Helena (Buffalo to Target) | MDT | Reconstruct road and provide turn lanes. |
| Canyon Ferry Road Reconstruction (water plant to Spokane Creek Road) | MDT | Reconstruct road and provide turn lanes. |
| Benton/Lyndale intersection | MDT | Reconstruct intersection. |

continued

Table 5-7 (continued)
Reasonably Foreseeable Transportation Projects

| Project Name | Jurisdiction | Description |
|--|----------------------|---|
| City-wide Signal Upgrade | MDT | Signal coordination and updating. |
| US Highway 12, Helena-East Helena | MDT | Mill and overlay the plant mix shoulders and median. |
| Cedar Street (N. Montana Avenue to I-15) | MDT | Possible road widening. |
| Custer/Cooney Signal | MDT/City | Install traffic signal. |
| Montana Avenue/Tara Court Signal | MDT | Install traffic signal. |
| Henderson Road Reconstruction (2005) | City | Road reconstruction. |
| Park Avenue | City | Overlay. |
| Green Meadow Dr. | City | Chip seal. |
| Brady Street | City | Road reconstruction. |
| 282—Montana City-South | MDT | Seal and cover. |
| 282 and Montana City | MDT | Intersection improvements. |
| Bridge over Tenmile Creek—2 kilometers (1.2 miles) west of Helena at Williams Street | MDT | Bridge reconstruction. |
| I-15—Jefferson City to Helena | MDT | Resurfacing. |
| Lincoln Road interchange | MDT | Reconstruction. |
| North Main and Lyndale Viaduct | MDT | Reconstruct N. Main to a four-lane facility with turn lanes, separated bike path and landscaping. Reconstruct Lyndale to a four-lane facility including removal of two viaducts and replacement of a pedestrian tunnel. Includes intersection improvements, landscaping, lighting, etc. |
| Getchell Street and Lyndale | City | Install traffic signal and provide turn lanes, rebuild utility as needed. |
| Highway 518/Highway 282 Jackson Creek Road | Jefferson County/MDT | Currently under study for safety improvements (STPS 282-1(3)0) |
| Ped/Bike Trail | Jefferson County | Incorporated in Red Cliff Estates Development. |
| Ped/Bike Trail | Jefferson County | Under Highway 282 at Elkhorn Inn (walkway needed for safety of school children). |
| West Side Frontage Road Completion | Jefferson County | Frontage Road needed between Montana City and Helena |
| Ped/Bike Trail | Jefferson County | Trail is being explored to connect Montana City and Helena. |

Table 5-8
Reasonably Foreseeable Infrastructure Improvements

| Project Name | Jurisdiction | Description |
|------------------------------------|---------------------|--|
| Stormwater system upgrades | City of Helena | Ongoing upgrades and replacement of sewer and water throughout City. |
| Water/sewer lines to neighborhoods | City of Helena | Ongoing as areas are annexed or upgraded. |
| Stormwater Phase II updates | City/county | Ongoing inventory of master plan update. |
| Access improvements | Jefferson County | Improvements for emergency service areas. |

Jefferson County has several land use classifications in the northern zoning district which stipulate the type of development that can occur. Jefferson County has seen tremendous growth in the past several years, primarily due to the area's proximity to Helena. This growth is expected to continue as new residential and commercial subdivisions are built and existing developments continue to fill in.

5.5.2 Historical Setting

Montana City originated as a mining camp in 1862. The discovery of gold in the region in 1864 led to the growth of Helena and East Helena. Many homesteads and mining operations were established in the area and by 1875 Helena became the capitol of Montana Territory. Further development centered on the Helena and Livingston Smelter (later ASARCO) built in 1888 and Fort Harrison built from 1894 to 1896. Operations at ASARCO continued until April 2001, when the smelter was shut down. Many residents from Helena and East Helena were employed at the smelter, one of the largest employers in the area.

During and following the mining era, the Helena Valley was predominately agricultural until the 1970s with land uses mostly large farmsteads and ranches. Though agriculture is still a major contributor to the area's economy, much agricultural land has been converted to commercial and residential uses and the economy is now predominately based on the government and the service industry.

The 1970s saw the first real expansion of suburban development into the Helena Valley. This expansion followed the completion of the I-15 "super highway" through the Helena Valley and Jefferson County in the early to late 1960s. The construction of I-15 enabled areas outside of the urban center to be accessed and promoted the movement of goods through the area. As growth spread to the areas surrounding downtown, now easily accessed by I-15, agricultural land was converted to accommodate new commercial and residential development. This was followed by a

period of slower growth through the 1980s and greater growth beginning in the 1990s that continues through today.

The study area has been impacted by mining, agriculture, and most recently, suburban expansion. The incremental impact of this growth over the past 40 years is a result of the construction of I-15, the growth in the employment base and in-migration to the area in the early 1990s. All of these have influenced the character of the area.

5.5.3 Environmental Consequences

5.5.3.1 Land Use (Growth) Impacts

The Helena Valley and northern Jefferson County have experienced the most growth in Montana and this trend is expected to continue whether or not any improvements are made to the I-15 Corridor. This anticipated growth is evidenced in both city and county plans.

As shown in **Table 5-6**, **Table 5-7**, and **Table 5-8**, growth and development are still occurring in the area. The potential major impacts resulting from development are increased impervious surface (roads, driveways, rooftops, parking lots, etc.), loss of rural open lands, loss of agricultural lands, loss of wildlife habitat, fragmentation of wildlife habitat, degradation of water quality, loss of wetlands and aquatic resources, and stress on the area's water availability and supply.

The cumulative land use impacts primarily would be a result of growth already expected to occur in the specific areas identified by the city and counties. As stated in Chapter 3.0, according to the U.S. Census Bureau, growth is expected to increase by 3% for Helena, 42% for Lewis & Clark County, and 53% for Jefferson County by 2025. Improvements to I-15 would not induce new development to the area beyond that which has been documented in the U.S. Census data. In other words, the I-15 Corridor improvements would not bring new growth into the Helena Valley; rather the improvements may cause a shift in the location of where the future development would happen. I-15 improvements may result in development occurring sooner in certain areas than anticipated. The shift in development may be distributed evenly in the corridor given that the build alternatives described in Chapter 2.0 include both a northern and a southern interchange.

With the No-Action Alternative growth and development would occur as projected by the 2002 Census data, the city of Helena and Lewis & Clark and Jefferson counties. According to the Land Use Advisory Group (see Section 3.2.2.3) under a No-Action scenario the majority of new households are expected to develop north of Custer Avenue, the majority of new retail employment is expected to develop between Custer Avenue and South Helena, and the majority of new non-retail employment is

expected to develop between Custer Avenue and South Helena. This growth and development coincides with areas of future growth and development identified by the city and counties. However, with this alternative transportation infrastructure would not be substantially improved to accommodate the anticipated growth.

With the Preferred Alternative new development in the northern valley may center in and around Custer Avenue. The area around Custer Avenue is adjacent to the city limits and the area north of Custer Avenue is in designated Urban Area C. The extension of city infrastructure to this area is reasonably expected due to the proximity to existing services and the immediate nature for annexation.

The Custer Avenue interchange may promote the infill or redevelopment of land already disturbed that is closer to the core urban areas. Additionally, current infrastructure may better support the Custer Avenue and South Helena interchanges.

With Alternative 2, new development in the northern valley would shift further north near Forestvale Road. The area around Forestvale Road is approximately 5 kilometers (3 miles) from the city limits and is in designated Transition Area E (a transition area is beyond the 20-year planning horizon for new infrastructure improvements). This interchange may cause development to occur sooner in this area than anticipated by the city or county. This could create a "leap frog" pattern of development into an area not easily accessed by city infrastructure or planned for annexation in the near future. However, growth is currently occurring in this area along the existing roadway infrastructure (N. Montana Avenue and Lincoln Road) and as evidenced by the designation of the North Hills as a temporary controlled groundwater area (October 2002).

The Forestvale Road interchange may contribute to a greater cumulative effect of impacts to converted land and ecological resources (including groundwater availability, 100-year floodplain, wetlands, and irrigated hay and grazing land serving as habitat) since it may contribute to more undeveloped land being developed. The Custer Avenue interchange may promote the infill or redevelopment of land already disturbed that is closer to the core urban areas. Additionally, current infrastructure may better support the Custer Avenue and South Helena interchanges, while a Forestvale Road interchange may require more physical and fiscal resources to expand the necessary utility, sanitation, and water systems.

5.5.3.2 Water Quality/Resources Impacts

In the late 1800s the gold rush brought thousands of miners to the area in search of gold. The waters in the study area were likely affected by a long history of both placer and hard-rock mining within the watershed, which began in the 1850s, peaked prior to 1900, and has been sporadic since then. Around the same time came the homesteaders and the agricultural boom. Irrigation canals were constructed altering

watercourses to meet the growing agricultural needs. After construction of I-15, residential and commercial development began to spread into the valley requiring water projects to meet the growing need for drinking water and wastewater treatment facilities. Suburban growth and development also brought an increase in on-site wells and septic systems scattered throughout the Helena Valley.

Changes in land use, increased growth, and the conversion of agricultural lands to developed lands can collectively impact water resources over time. Development, such as those listed in **Table 5-6**, **Table 5-7**, and **Table 5-8** rapidly consumes and converts natural landscapes to impervious surfaces such as parking lots, roads and rooftops, while resulting in a loss of groundwater infiltration. Water runs off these impervious surfaces, carrying pollutants directly into rivers and lakes, instead of filtering through the soil into underground aquifers. As growth and development increase, detrimental cumulative effects on the quality of local water resources can result from individually minor but collectively greater increases in impervious surface area over a period of time.

Diminishing quality and quantities of water that recharge underground aquifers, and increases in the amount of pollution in receiving streams and lakes result in various cumulative impacts on the environment. The cumulative impacts include adverse effects on wildlife from diminished water quality, and adverse effects on human water consumption due to both the limits of water quantity and impacts to quality.

Cumulative impacts to aquatic life could result from excess runoff containing increased sediment loads, and/or water laden with metals and pollutants. For instance, residential and commercial development converts land uses that were traditionally forested, croplands, or rangelands into parking lots, roads, and rooftops. The cumulative effects of this change in land use function will affect the surrounding water bodies such as Tenmile Creek, Silver Creek, and eventually Lake Helena. The type and extent of cumulative impacts from road runoff on the water resources of the study area depends upon site-specific conditions such as type and size of the receiving water body, sensitivity of habitat, and various characteristics of the road improvements. One cumulative impact of concern on Tenmile Creek is sediment loading. Sediment loads increase turbidity which could eventually lead to aquatic habitat impairment and changes in the physical and hydrologic characteristics of the receiving waters. If not prevented, sedimentation could literally fill a riverbed with sand, and in some cases alter its physical capacity to convey water. Furthermore, sediment deposits can smother eggs and larvae of benthic and other small aquatic life once settled. Reductions in the health and quantity of aquatic organisms could place stress on wildlife that depend upon aquatic organisms for survival. Another type of cumulative impact to I-15 water resources is an increase in contaminated runoff as a result of an increase in development. Contaminated runoff laden with metals, toxins, and pesticides could pollute both receiving waters and aquatic habitat, consequently

resulting in impairment to the health of aquatic life and the aquatic system as a whole. Toxins could compound and be passed throughout the food chain to wildlife whose existence depends upon aquatic organisms and the aquatic habitat.

The cumulative impacts also include adverse effects on human water consumption due to limits of water quantity, and impacts to water quality. Increases in impervious surface area stemming from growth and development result in declining aquifer recharge rates. The study area is not a predominant source for groundwater recharge (for more details, refer to Section 5.3.10). This element, coupled with reasonably foreseeable growth and incremental increases in impervious surface area, could result in cumulative impacts to human water consumption.

Many residences and businesses outside of municipal sewer and water infrastructure limits depend upon groundwater wells for their water needs. In the case of groundwater withdrawals (as outlined in the Montana Water Law 2001, statute 85-2-302), a Beneficial Water Use Permit is not required before appropriating groundwater by means of a well or developed spring (outside the boundaries of a controlled groundwater area) with a maximum appropriation of 35 gallons per minute (GPM) or less, not to exceed 10 acre-feet per year. Though the actual water withdrawal of individual wells that fall under the above guidelines could be difficult to assess (these wells are not regularly monitored), the potential withdrawal could be estimated and projections could be derived parallel to growth projections associated with residential and commercial developments. With less water recharging the aquifer, and increased wellhead development outside of infrastructure limits, a large number of individual wells withdrawing 35 GPM of water from the same aquifer would cumulatively impact the water availability and supply in that aquifer. This may be the case with a number of projects listed in **Table 5-6** which are small lot subdivisions. Furthermore, increases in the number of septic systems (that frequently accompany development outside of municipal infrastructure limits) could potentially result in the increased likelihood of groundwater and well contamination via septic leaching. Effluent from individual septic systems containing nitrates and pathogenic microorganisms can result in collective adverse health effects over time.

With the No-Action Alternative growth and development would occur as discussed above. Future development is expected to locate in and around the areas of existing infrastructure, therefore lessening the burden on surrounding groundwater resources as a sole water source. The alternative is compatible with the goal of focusing utility growth to the southeastern developing areas (as stated in the *Helena Water Supply 2010 Plan*), and reservoir improvements (associated with City of Helena FY 2000 Phase 1 Water Supply Improvements) that have recently been constructed to accommodate anticipated growth in the southern interchange area.

With the Preferred Alternative it is possible that any anticipated growth could be located between or adjacent to the proposed Custer and South Helena interchanges. Due to the physical extent of the Preferred Alternative, this alternative could effectively concentrate more future development in and around the areas of existing infrastructure, therefore lessening the burden on surrounding groundwater resources as a sole water source. The Preferred Alternative is compatible with the goal of focusing utility growth to the southeastern developing areas (as stated in the *Helena Water Supply 2010 Plan*), and reservoir improvements (associated with City of Helena FY2000 Phase 1 Water Supply Improvements) that have recently been constructed to accommodate anticipated growth in the southern interchange area. Based on city and county plans, The Preferred Alternative, located in an Urban area, encourages future anticipated development to exemplify more of an “infill” approach as opposed to a “dispersed” approach. However, there will likely be more growth in and around Custer Avenue and the west side Frontage Road than with the No-Action Alternative.

Though difficult to assess, it is likely that a positive cumulative impact of the Preferred Alternative could be that less undisturbed land would be converted to development, due to the fact that there is less natural, open land within the extent of this alternative, and infill development would be more likely to occur. Collectively, the effects of less land conversion could also result in less new impervious surface area; therefore, reducing runoff and adverse cumulative impacts to surface water resources, and associated aquatic habitat. Although some of the anticipated growth undoubtedly could shift north of the extent of the Preferred Alternative, it is more likely that future growth and development would remain more centralized around the proposed transportation improvements and adjacent to city limits and infrastructure.

With Alternative 2 it is possible that growth could be shifted further north to take advantage of improved access at the new Forestvale interchange. The location of the proposed Forestvale interchange with Alternative 2 is approximately 4.8 kilometers (3 miles) further north than the proposed Custer interchange with the Preferred Alternative. Currently, the northern limits of the city of Helena’s infrastructure is at Custer Avenue, and future plans for City infrastructure extensions are not expected to extend to Forestvale Road in the near term. One of the goals listed in the *Helena Water Supply 2010 Plan* states that the City should “Allow for utility growth especially in the southeastern developing areas.” Therefore, it is likely that future development north of Custer Avenue would not be on municipal infrastructure systems unless changes are made to the goals stated in the *Helena Water Supply 2010 Plan*.

Though difficult to assess, the aforementioned cumulative impacts associated with Alternative 2 impact future sustainability in the quality and quantity of groundwater to a greater degree than the Preferred Alternative. Northerly growth shifts potentially associated with Alternative 2 could result in “leapfrog” development, or

development beyond existing and future planned infrastructure utilities. Development in these areas will rely on wells and septic systems, which could have an increased impact on groundwater. However, some limitations to development north of Forestvale Road occur with the North Hills Temporary Controlled Groundwater Area. In addition, the cumulative impacts of increased impervious surface area in the northern portion of the study area would have more of an adverse impact upon surface water resources such as Tenmile Creek, located near the proposed Forestvale Road intersection. Cumulative impacts resulting from surface water degradation (as summarized above) could affect both aquatic and non-aquatic wildlife and habitat.

Some of the solutions to addressing water needs of the Helena Valley and surrounding areas are explored in the *Helena Water Supply (2010) Plan*. For additional mitigation, see Sections 5.3.10 and 5.30.20.

5.5.3.3 Ecological Resources Impacts

Cumulative impacts to threatened and endangered species or other biological resources resulting from the proposed improvements would occur in conjunction with other proposed or recently completed transportation, residential, commercial, and agricultural projects in the study area (see **Table 5-6**, **Table 5-7** and **Table 5-8**).

The reasonably foreseeable projects that occur in urban areas and are minor in scope would not result, individually or cumulatively, in substantive impacts to threatened or endangered species, sensitive species, wetlands, or other biological resources. For example, a Final Biological Resources Report prepared for the Canyon Ferry Road reconstruction project indicates minimal impacts to biological resources totaling 0.27 hectares (0.674 acres) of wetland impact, due to the converted residential/agricultural nature of Canyon Ferry Road.

It is likely that some future commercial and residential development would occur in developed transportation corridors, but their cumulative effects to biological resources are not expected to be substantive as these corridors would likely be previously disturbed. However, development may shift to the newly created corridors at South Helena and either Custer Avenue with the Preferred Alternative or Forestvale Road with Alternative 2. Both South Helena and Custer Avenue are on the edge of city limits and are expected, by the city and Lewis & Clark County, to be developed in the near term resulting in fewer impacts. Forestvale Road is further from city limits in a Transition Area and could cause greater impacts.

In any event, subdivisions are subject to review and approval by Lewis & Clark County, Jefferson County, or the city of Helena and would need to be evaluated and approved after considering many factors, including that of potential impacts to natural resources. Available resources used to guide this review would include MNHP printouts of plant and animal species of concern locations, MNHP prairie dog town

maps of the Helena Valley, and aerial photograph-based wetland mapping of the greater Helena Valley completed in 1999. Under the requirements of the federal Clean Water Act, Section 404 permits would be required for subdivision activities proposing fill placement in Corps jurisdictional wetlands or other Waters of the U.S. Coordination with the USFWS for any listed, potentially listed, or candidate species would also be required to comply with the ESA. Comprehensive land use planning and individual project evaluation would facilitate minimization of cumulative impacts to biological resources in the study area.

5.5.4 Summary

The environmental impacts, as discussed above, result from the incremental impact of the shifted location of growth that when added to past, present, and reasonably foreseeable increases in growth and development, result in cumulative impacts to the surrounding area. The majority of the cumulative impacts to land use, water resources and water quality, and ecological resources are more a result of the growth and development already expected to occur in the area whether any improvements are made to I-15. Since this project may contribute to where the development will occur it contributes to cumulative impacts, though not significantly. The Preferred Alternative could cause the development to shift to the area around Custer Avenue, which is adjacent to current city limits and would more likely receive city services in the near term, thus potentially having less of a contribution to cumulative impacts to water and infrastructure demands. Alternative 2, however, could cause a more northerly shift to the area around Forestvale Road, which is further from city limits, thus potentially having more of a contribution to cumulative impacts. The No-Action Alternative also will contribute to the cumulative impacts on the area without improving safety, access, connectivity and mobility within the study area.

By directing growth to communities where people already live and work, the number of new paved and other impervious surfaces that cover the landscape can be limited, making existing communities more attractive, and discouraging new infrastructure that alters natural hydrologic functions and increases taxpayer burdens. Smart growth strategies generally entail integrating planning and incentives with infrastructure investments to revitalize existing communities, prevent “leapfrogging” sprawl, provide more transportation choices, and protect open space.

Of particular interest relating to new development in the Helena area is a new study, *Our Way to Water Shortages: How Sprawl Aggravates Drought*, by American Rivers, NRDC (Natural Resources Defense Council), and Smart Growth America. The study investigated what happens to water supplies when our natural areas are replaced with roads, parking lots, and buildings. The use of smart growth techniques can reduce the impacts associated with development and the increase in amounts of impervious

surface area. These approaches protect farms and forests on the metropolitan fringe by encouraging investment in the urban core and older suburbs.

The study found that when communities focused their efforts on preserving forests, wetlands, and other valuable lands, their vital role in recharging groundwater would not be compromised. Some of the smart growth policies to address water shortage issues include:

- ▶ Allocate more resources to identify and protect open space and critical aquatic areas.
- ▶ Practice sound growth management and provide incentives for smart growth and designated growth areas.
- ▶ Integrate water supply into planning efforts by coordinating road-building and other construction projects with water resource management activities.
- ▶ Invest in existing communities by rehabilitating infrastructure before building anew. A “fix-it-first” strategy.
- ▶ Encourage compact development that mixes retail, commercial and residential development.
- ▶ Manage stormwater using natural systems by replacing concrete sewer and tunnel infrastructure, which conveys stormwater too swiftly into our waterways, with low-impact development techniques that foster local infiltration of stormwater to replenish groundwater.
- ▶ Devote more money and time to research and analysis of the impact of development on water resources, and make this information accessible.

These efficient, cost-effective, and proven approaches should be considered by state and local authorities who are trying to plan for community development and cope with the associated water-related issues. These strategies would provide multiple benefits for communities that not only need to conserve water and prevent water pollution, but also to plan for future growth without compromising their natural resources.

5.5.5 Cumulative Impacts Mitigation

Mitigation of cumulative impacts often goes beyond the authority of FHWA and MDT to include those with authority for local land use planning decisions. One way local planning jurisdictions can reduce environmental impacts is through the implementation of smart growth initiatives. These initiatives can provide economic, social and environmental benefits to a community.

Smart growth development includes compact and mixed-use land types. Compact development and mixed-use development take up less land than conventional development creating more open space and fewer impacts to wildlife and aquatic habitat. Compact zoning also reduces the amount of impervious surface reducing water quality impacts. Infrastructure requirements are greatly reduced in more densely developed areas resulting in lower costs to build for the developer, city and ultimately the consumer. In mixed-use developments housing, offices, restaurants, entertainment and shopping are located close together which can reduce the number of vehicle trips and encourage walking and bicycling.

As the Helena Valley and north Jefferson County continue to face growth pressures, more complex and long-term strategies focusing on the root of the congestion problem can be incorporated into land use and transportation planning. Specifically, strategies could be implemented by local planning jurisdictions that encourage people to live near transit stops or near places of employment. Future land use plans could be integrated with future transportation plans. Land use characteristics directly influence the level of demand placed on transportation networks. See the section on Alternative Transportation Solutions in Chapter 4.0 for a discussion on Transportation Demand Management (TDM). Residential and employment density, jobs-housing balance, land-use mix, site design, and the location of service/retail destinations all influence the type and length of trips made each day.

At the local agency planning level, environmentally sensitive development strategies also can be incorporated into future land use and transportation plans. These development strategies are long-term strategies that can contribute to the quality of life in a community. Growing communities such as those within the study area, have an opportunity to implement planning guidelines that encourage smart growth practices. Local jurisdictions in the study area have already identified environmentally sensitive development, preservation of natural resources, and maintenance of the community character as important goals in guiding future development.

As urban development encroaches on the natural environment, there is a growing concern about the impacts it would have on ecologically sensitive areas, wildlife habitat, agriculture, open space, and historic/cultural resources. Incorporating the concern for these sensitive lands in the community planning process can help in protecting these areas while preserving air, water and visual resources.

Rapid growth and development also impact a community's infrastructure from roads to schools. Smart growth policies may help alleviate some of the burdens placed on these community facilities from rapid growth by building walkable communities, purchasing and conserving open space, restricting development on sensitive lands, encouraging pedestrian-friendly development and centering housing near commercial/retail centers and transit facilities, and providing other means of

transportation. All of these strategies may create a greater sense of community while preserving the natural environment.

5.6 Summary of Impacts

Table 5-9 summarizes the impacts described in this FEIS for the No-Action Alternative, the Preferred Alternative (Alternative 1) and Alternative 2.

Table 5-9
Summary of Impacts Described in the FEIS

| Resource | No-Action Alternative | Preferred Alternative South Helena/Capitol/Custer | Alternative 2 South Helena/Capitol/ Forestvale |
|--|--|---|---|
| Transportation (including Pedestrian & Bicycle Facilities) | <ul style="list-style-type: none"> Not compatible with projects identified in area plans. Does not meet project purpose and need. I-15 and surrounding roadway system traffic and interchange usage would continue to increase with no substantial improvements provided. Vehicle miles of travel and vehicle hours of travel will increase as traffic congestion increases. | <ul style="list-style-type: none"> Compatible with projects identified in area plans. Custer interchange is in an Urban Area currently zoned by the city. Traffic on I-15 increases by approximately 120% between Custer Avenue and Cedar Street, by 45% between Cedar and Capitol, and by 20% between Capitol and South Helena interchange. Minor increases north of Custer and south of the South Helena interchange. | <ul style="list-style-type: none"> Compatible with projects identified in area plans. Forestvale interchange is in a Transition Area not currently zoned by the city. Traffic on I-15 increases by approximately 75% between Forestvale and Cedar Street, by 40% between Cedar and Capitol, and by 20% between Capitol and South Helena interchange. Minor decreases north of Forestvale and minor increases south of South Helena. |

continued

Table 5-9 (continued)
Summary of Impacts Described in the FEIS

| Resource | No-Action Alternative | Preferred Alternative South Helena/Capitol/Custer | Alternative 2 South Helena/Capitol/ Forestvale |
|--|---|---|--|
| Transportation (including Pedestrian & Bicycle Facilities) (cont'd.) | <ul style="list-style-type: none"> • 2025 LOS would not meet MDT LOS standards at the Lincoln Road, Capitol and Montana City interchange ramps, and the I-15 mainline between Capitol and Cedar Street interchanges. • Emergency response access would continue to worsen as traffic congestion increases. • Access to community resources would worsen as traffic congestion increases. • Most safety concerns would not be addressed. | <ul style="list-style-type: none"> • Increase in traffic on Custer Avenue, Sierra Road, east side Frontage Road (between Custer and Sierra), Broadway (west of Colonial Drive), and Road 282/South Hills Road. • Decrease in traffic on N. Montana Avenue (between Lincoln and Broadway), N. Washington Street (between Custer and Cedar), and along Cedar east of I-15. • Reduced travel demand on west side Frontage Road due to South Helena interchange. | <ul style="list-style-type: none"> • Increase in traffic on Forestvale Road, east side Frontage Road (north of Forestvale Road), N. Montana Avenue (south of Sierra Road), Road 282/South Hills Road, and isolated segments of Prospect/11th Avenue and Broadway. • Decrease in traffic on N. Montana Avenue (between Lincoln and Broadway), east side Frontage Road (between Forestvale and Custer), Lincoln Road and Sierra Road. • Reduced travel demand on west side Frontage Road due to South Helena interchange. |

continued

Table 5-9 (continued)
Summary of Impacts Described in the FEIS

| Resource | No-Action Alternative | Preferred Alternative South Helena/Capitol/Custer | Alternative 2 South Helena/Capitol/ Forestvale |
|--|--|---|---|
| Transportation (including Pedestrian & Bicycle Facilities) (cont'd.) | <ul style="list-style-type: none"> • May include pedestrian/bicycle improvements identified as existing needs by local planning agencies. • Conditions for truck travel will continue to worsen. | <ul style="list-style-type: none"> • Moderate decrease in traffic on Prospect/11th Avenue (between Capitol interchange and Fee Street) and along segments of Broadway due to Capitol improvements. • Approx. 44,000 daily trips projected in 2025 at a new Custer interchange. • Approx. 16,000 daily trips projected in 2025 at a new South Helena interchange. • 15% increase in use of Capitol interchange and 25% reduction in usage of Cedar interchange. Minor differences at Lincoln Road and Montana City interchanges. | <ul style="list-style-type: none"> • Moderate decrease in traffic on Prospect/11th Avenue (between Capitol interchange and Fee Street) due to Capitol improvements. • Approx. 26,000 daily trips projected in 2025 at a new Forestvale interchange. • Approx. 16,000 daily trips projected in 2025 at a new South Helena interchange. • 15% increase in use of Capitol interchange, 10% reduction in usage of Cedar interchange, 20% reduction in usage of Lincoln Road interchange. Minor differences at Montana City interchange. |

continued

Table 5-9 (continued)
Summary of Impacts Described in the FEIS

| Resource | No-Action Alternative | Preferred Alternative South Helena/Capitol/Custer | Alternative 2 South Helena/Capitol/ Forestvale |
|--|------------------------------|--|--|
| Transportation (including Pedestrian & Bicycle Facilities) (cont'd.) | | <ul style="list-style-type: none"> • Overall reduces vehicle miles of travel by 0.2 %. An I-15 increase in VMT is offset by reductions in arterial and collector roadways. • 1.9% decrease in vehicle hours of travel. • Would maintain LOS C at intersections and LOS B on I-15 and ramps. • Provides improved emergency response travel time when compared to the No-Action Alternative. • Improves access to community resources. • Improvements address identified safety concerns. • Pedestrian/bicycle facilities are part of all improvements. | <ul style="list-style-type: none"> • Overall reduces vehicle miles of travel by 0.1%. An I-15 increase in VMT is offset by reductions in arterial and collector roadways. • 1.6% decrease in vehicle hours of travel. • Would maintain LOS C at interchanges and LOS B on I-15 and on ramps. • Provides improved emergency response travel time. • Improves access to community resources. • Improvements address identified safety concerns. • Pedestrian/bicycle facilities are part of all improvements. |

continued

Table 5-9 (continued)
Summary of Impacts Described in the FEIS

| Resource | No-Action Alternative | Preferred Alternative South Helena/Capitol/Custer | Alternative 2 South Helena/Capitol/ Forestvale |
|--|---|--|--|
| Transportation (including Pedestrian & Bicycle Facilities) (cont'd.) | | <ul style="list-style-type: none"> Truck mobility would be improved on US 12 and I-15. Improvements at Custer serve commercial areas for truck access. | <ul style="list-style-type: none"> Truck mobility would be improved on US 12 and I-15. |
| Land Use | <ul style="list-style-type: none"> Not responsive to community planning efforts. Does not improve access to and from I-15 or across I-15. Does not meet project purpose and need. Would not facilitate any changes to existing land uses and zoning designations. | <ul style="list-style-type: none"> Undeveloped land would be converted to the South Helena & Custer Interchanges, Broadway underpass and west side Frontage Road. Area around Custer is located in an Urban Area and zoned for general commercial or public lands and institutions. City services could be provided in the near term. No impacts to zoning. | <ul style="list-style-type: none"> Undeveloped land would be converted to the South Helena and Forestvale interchanges. Area around Forestvale is located in a Transition Area and is not currently zoned. City services are not programmed in the near term. No impacts to zoning. |

continued

Table 5-9 (continued)
Summary of Impacts Described in the FEIS

| Resource | No-Action Alternative | Preferred Alternative South Helena/Capitol/Custer | Alternative 2 South Helena/Capitol/ Forestvale |
|------------------------|--|---|---|
| Seismic Considerations | <ul style="list-style-type: none"> No impacts. Only the Lincoln interchange structure will be replaced | <ul style="list-style-type: none"> No impacts. Liquefaction susceptibility varies throughout the corridor. Structures will be designed accordingly. Custer Avenue is in an area with low susceptibility to liquefaction | <ul style="list-style-type: none"> No impacts. Liquefaction susceptibility varies throughout the corridor. Structures will be designed accordingly. Forestvale Road is in an area with high susceptibility to liquefaction. |
| Farmland | <ul style="list-style-type: none"> No impacts. | <ul style="list-style-type: none"> Approximately 16 hectares (40 acres) impacted. | <ul style="list-style-type: none"> Approximately 16 hectares (40 acres) impacted. |
| Social | <ul style="list-style-type: none"> Increase in congestion could hinder access to community facilities and neighborhoods. Increase in traffic volumes would make it more difficult to cross I-15. | <ul style="list-style-type: none"> Increased access and mobility would reduce cut-through traffic volumes. Provides safer, more efficient and convenient travel. | <ul style="list-style-type: none"> The new Forestvale Road brings traffic to an area where there was none. Provides safer, more efficient and convenient travel. |

continued

Table 5-9 (continued)
Summary of Impacts Described in the FEIS

| Resource | No-Action Alternative | Preferred Alternative South Helena/Capitol/Custer | Alternative 2 South Helena/Capitol/ Forestvale |
|--|---|--|--|
| Social (cont'd.) | <ul style="list-style-type: none"> • More cut-through traffic in some neighborhoods. • Increase in emergency vehicle response time. | <ul style="list-style-type: none"> • Relieves congestion, improves safety and crash issues and emergency vehicle response time, and provides safe crossing facilities for pedestrian and bicyclists. • Improves connectivity between central and southern neighborhoods and current and future community facilities. • May shift the location where future community facilities locate. | <ul style="list-style-type: none"> • Relieves congestion, improves safety and crash issues and emergency vehicle response time, and provides safe crossing facilities for pedestrian and bicyclists. • Improves connectivity between central and northern neighborhoods and current and future community facilities. • May shift the location where future community facilities locate further north. |
| Right-of-Way/ Relocations/Utilities | <ul style="list-style-type: none"> • No impacts. | <ul style="list-style-type: none"> • Approximately 80 parcels may be partially impacted. No relocations are anticipated. | <ul style="list-style-type: none"> • Approximately 60 parcels may be impacted. No relocations are anticipated. |
| Economic Conditions | <ul style="list-style-type: none"> • Difficult for commuter, truck & delivery traffic to cross I-15. | <ul style="list-style-type: none"> • Improved connectivity to centrally and southerly located existing and future business centers. | <ul style="list-style-type: none"> • Indirectly improves connectivity to most development centers. |

continued

Table 5-9 (continued)
Summary of Impacts Described in the FEIS

| Resource | No-Action Alternative | Preferred Alternative South Helena/Capitol/Custer | Alternative 2 South Helena/Capitol/ Forestvale |
|----------------------------------|--|--|--|
| Economic Conditions (cont'd.) | <ul style="list-style-type: none"> Access to and from commercial, employment and recreational areas could deteriorate as traffic volumes and congestion increase. | <ul style="list-style-type: none"> Future business activities may locate in the central and southern part of the study area, both designated Urban Areas. | <ul style="list-style-type: none"> Future business activities may locate further north, in a Transition Area requiring the expenditure of funds not programmed or anticipated at the present time. |
| Air Quality | <ul style="list-style-type: none"> Highest emissions of CO and HC in year 2025 due to highest predicted levels of congestion. | <ul style="list-style-type: none"> Very low levels of congestion; CO and HC emissions would be low. 13% increase in VMT on the interstate, but a decrease of VMT on arterial and collector roads. Reduces overall VMT by 0.2% compared to the No-Action Alternative. Overall VMT increases resulting in more mobile source pollutants. 1.9% decrease in VHT resulting in reduced CO and HC emissions. | <ul style="list-style-type: none"> Very low levels of congestion; CO and HC emissions would be low. 15.5% increase in VMT on the interstate, but a decrease of VMT on arterial and collector roads. Increases overall VMT by 0.1% compared to the No-Action Alternative. Overall VMT increases resulting in more mobile source pollutants. 1.6% decrease in VHT resulting in reduced CO and HC emissions. |

continued

Table 5-9 (continued)
Summary of Impacts Described in the FEIS

| Resource | No-Action Alternative | Preferred Alternative South Helena/Capitol/Custer | Alternative 2 South Helena/Capitol/ Forestvale |
|-----------------------------------|---|---|--|
| Noise | <ul style="list-style-type: none"> Noise levels would continue to increase as traffic volumes increase and would impact study area receptors. Higher forecasted noise volumes between Cedar Street and Capitol due to concentration of traffic volumes along I-15. | <ul style="list-style-type: none"> Noise impacts identified at 16 receptors. | <ul style="list-style-type: none"> Noise impacts identified at 19 receptors. |
| Water Resources/ Water Quality | <ul style="list-style-type: none"> Unrestricted highway runoff, sand deposition from winter maintenance, and stormwater discharge would continue to occur. As development occurs, new water well use would continue, stormwater and septic effluent discharge could increase. | <ul style="list-style-type: none"> Additional 14 hectares (35 acres) of impervious surface, resulting in groundwater infiltration loss and increased runoff. As development occurs, new water well use would continue, stormwater and septic effluent discharge could increase. | <ul style="list-style-type: none"> Additional 14 hectares (35 acres) of impervious surface, resulting in groundwater infiltration loss and increased run-off. As development occurs, new water well use would continue, stormwater and septic effluent discharge could increase. |

continued

Table 5-9 (continued)
Summary of Impacts Described in the FEIS

| Resource | No-Action Alternative | Preferred Alternative South Helena/Capitol/Custer | Alternative 2 South Helena/Capitol/ Forestvale |
|---|---|---|--|
| Water Resources/ Water Quality (cont'd.) | | | <ul style="list-style-type: none"> • Temporary impacts to surface water resources and quality due to the widening of culverts for the Helena Valley Irrigation Canal and bridges over Tenmile Creek. • Potential permanent impacts to water quality of Tenmile Creek due to impervious surface associated with a new Forestvale interchange. |
| Wetlands | <ul style="list-style-type: none"> • No impacts. | <ul style="list-style-type: none"> • Impacts to 0.50 hectare (1.24 acres) of non-jurisdictional Class III and IV wetlands. | <ul style="list-style-type: none"> • Impacts to 2.1 hectares (5.5 acres) of non-jurisdictional Class II, III and IV wetlands. • Impacts to 22 square meters (240 square feet) of jurisdictional wetlands. |

continued

Table 5-9 (continued)
Summary of Impacts Described in the FEIS

| Resource | No-Action Alternative | Preferred Alternative South Helena/Capitol/Custer | Alternative 2 South Helena/Capitol/ Forestvale |
|------------------------------------|---|---|--|
| Vegetation, Wildlife, and Aquatics | <ul style="list-style-type: none"> No impacts. Growth would continue as would indirect impacts to vegetation and wildlife associated with development. Runoff would continue to indirectly impact aquatic resources. | <ul style="list-style-type: none"> Impacts to dry native and introduced grasslands, low quality seasonal habitat. Extension of west side Frontage Road would increase the difficulty for mule deer and other species to cross I-15. Some displacement of wildlife from minor loss of habitat (the area is an Urban Area and already has development) near Custer Avenue. Direct wildlife mortality to limited species during construction. Noxious weeds may establish in disturbed areas until seeded vegetation establishes. | <ul style="list-style-type: none"> Impacts to dry native and introduced grasslands, low quality seasonal habitat. Extension of west side Frontage Road would increase the difficulty for mule deer and other species to cross I-15. Wildlife habitat loss due to Class II wetland impacts (Wetland 12) at Forestvale Road. Decreases available wildlife habitat in a less developed area (the area is a Transition Area with minimal existing development). Noxious weeds may establish in disturbed areas until seeded vegetation establishes. |

continued

Table 5-9 (continued)
Summary of Impacts Described in the FEIS

| Resource | No-Action Alternative | Preferred Alternative South Helena/Capitol/Custer | Alternative 2 South Helena/Capitol/ Forestvale |
|---|------------------------------|---|--|
| Vegetation, Wildlife, and Aquatics (cont'd.) | | <ul style="list-style-type: none"> • No aquatic resource impacts. • Minor irrigation ditch impacts at Lincoln Road. | <ul style="list-style-type: none"> • Direct wildlife mortality to limited species during construction. • Minor impacts at Tenmile Creek depending on final design. • Minor irrigation ditch impacts at Forestvale and Lincoln Road. • Increase traffic in the area and the addition of more traffic lanes between Capitol and Forestvale (for auxiliary lanes) increases the difficulty for deer and other species to cross I-15 in and around Tenmile Creek. • Temporary sedimentation at Tenmile Creek and Wetland 6 during precipitation events may be associated with construction at Forestvale. |

continued

Table 5-9 (continued)
Summary of Impacts Described in the FEIS

| Resource | No-Action Alternative | Preferred Alternative South Helena/Capitol/Custer | Alternative 2 South Helena/Capitol/ Forestvale |
|---------------------------------|---|---|--|
| Floodplains | <ul style="list-style-type: none"> No impacts. | <ul style="list-style-type: none"> No impacts. | <ul style="list-style-type: none"> Minor impacts to 0.1 hectare (0.25 acre) from Frontage Road and irrigation ditch relocation. Temporary construction-related impacts at Forestvale. |
| Wild & Scenic Rivers | N/A | N/A | N/A |
| Threatened & Endangered Species | <ul style="list-style-type: none"> No impacts. | <ul style="list-style-type: none"> Bald eagle: No Affect. No impacts to nests or critical habitat. Construction activity could temporarily displace non-breeding eagles. Ute Ladies' tresses orchid: No Affect. Black-tailed Prairie Dog: No impact. | <ul style="list-style-type: none"> Bald eagle: No Affect. Direct loss of 2 hectares (4.9 acres) of potential bald eagle habitat (Forestvale). No impacts to nests or critical habitat. Construction activity could temporarily displace non-breeding eagles. Ute Ladies' tresses orchid: Not Affect. Black-tailed Prairie Dog: No impact. |

continued

Table 5-9 (continued)
Summary of Impacts Described in the FEIS

| Resource | No-Action Alternative | Preferred Alternative South Helena/Capitol/Custer | Alternative 2 South Helena/Capitol/ Forestvale |
|-------------------------------|---|--|---|
| Historical/Cultural Resources | <ul style="list-style-type: none"> No impacts. | <ul style="list-style-type: none"> No impacts to archaeological resources (24JF697 and 24JF1719). Site 24LC1784 (Deal House)-No Adverse Effect. Historic Site 24LC1139 (Northern Pacific Railroad)-No Adverse Effect. Historic Site 2LC1786 (Washburn Farmstead/Eddie Barbeau Home)-No Adverse Effect. | <ul style="list-style-type: none"> No impacts to archaeological resources (24JF697 and 24JF1719). Site 24LC1784 (Deal House)-No Adverse Effect. |
| Hazardous Waste | <ul style="list-style-type: none"> No impacts. | <ul style="list-style-type: none"> Potential impact to 9 sites. | <ul style="list-style-type: none"> Potential impact to 8 sites. |
| Visual | <ul style="list-style-type: none"> No impacts. | <ul style="list-style-type: none"> Loss of vegetation; new or modified bridges interrupt views; new signing, lighting, signals, etc. at interchanges; convert existing open space to highway use. Possible use of retaining walls. | <ul style="list-style-type: none"> Loss of vegetation; new or modified bridges interrupt views; new signing, lighting, signals, etc. at interchanges; convert existing open space to highway use. Possible use of retaining walls. |

continued

Table 5-9 (continued)
Summary of Impacts Described in the FEIS

| Resource | No-Action Alternative | Preferred Alternative South Helena/Capitol/Custer | Alternative 2 South Helena/Capitol/ Forestvale |
|------------------------------|---|---|---|
| Parks & Recreation Resources | <ul style="list-style-type: none"> Includes projects identified in the <i>Comprehensive Parks, Recreation and Open Space Plan</i>. | <ul style="list-style-type: none"> No impacts to parks in study area. Improved facilities for pedestrians and bicyclists at all new and reconstructed interchanges in addition to those occurring under the No-Action Alternative. | <ul style="list-style-type: none"> No impacts to parks in study area. Improved facilities for pedestrians and bicyclists at all new and reconstructed interchanges in addition to those occurring under the No-Action Alternative. |
| Construction | <ul style="list-style-type: none"> No impacts. | <ul style="list-style-type: none"> Potential for decreased mobility during construction; dust; noise; runoff; traffic congestion; temporary restricted access; potential for accidental spill of hazardous materials and visual impacts. | <ul style="list-style-type: none"> Potential for decreased mobility during construction; dust; noise; runoff; traffic congestion; temporary restricted access; potential for accidental spill of hazardous materials and visual impacts. |
| Permits | <ul style="list-style-type: none"> None required. | Permits required: <ul style="list-style-type: none"> A weed control plan approved by Lewis & Clark and Jefferson counties. | Permits required: <ul style="list-style-type: none"> A weed control plan approved by Lewis & Clark and Jefferson counties. |

continued

Table 5-9 (continued)
Summary of Impacts Described in the FEIS

| Resource | No-Action Alternative | Preferred Alternative South Helena/Capitol/Custer | Alternative 2 South Helena/Capitol/ Forestvale |
|-------------------|-----------------------|---|---|
| Permits (cont'd.) | | <p>Permits required:</p> <ul style="list-style-type: none"> • A <i>Section 402</i>/ MPDES permit from the MDEQ's Permitting and Compliance Division will be required. A Notice of Intent (NOI) for Stormwater Discharges under the MPDES and a General Permit (MTR 100000, effective June 8, 2002) will be required with DEQ for the control of water pollution for both specific and non-point sources. • A <i>Section 404</i> permit from the U.S. Army Corps of Engineers (for filling in jurisdictional wetlands or Waters of the U.S.). • Air and Waste Management Bureau, asphalt plant and crusher permit for air quality from the DEQ. | <p>Permits required:</p> <ul style="list-style-type: none"> • A <i>Section 402</i>/ MPDES permit from the MDEQ's Permitting and Compliance Division will be required. A Notice of Intent (NOI) for Stormwater Discharges under the MPDES and a General Permit (MTR 100000, effective June 8, 2002) will be required with DEQ for the control of water pollution for both specific and non-point sources. • A <i>Section 404</i> permit from the U.S. Army Corps of Engineers (for filling in jurisdictional wetlands or Waters of the U.S.). • Air and Waste Management Bureau, asphalt plant and crusher permit for air quality from the DEQ. |

continued

Table 5-9 (continued)
Summary of Impacts Described in the FEIS

| Resource | No-Action Alternative | Preferred Alternative South Helena/Capitol/Custer | Alternative 2 South Helena/Capitol/ Forestvale |
|-------------------|-----------------------|--|--|
| Permits (cont'd.) | | <ul style="list-style-type: none"> The following permits, if applicable, for relocation of utilities from the MDT's Butte and Great Falls Districts: <ul style="list-style-type: none"> RW131 Permit for utilities located in the right-of-way RW20 Permit for encroachment in the right-of-way RW20S Permit for attachment of utilities to structures RW20A Environmental Checklist required for any projects not highway related Approach Permit for access to interstate | <ul style="list-style-type: none"> Section 318 authorization 124SPA Stream Protection permit The following permits, if applicable, for relocation of utilities from the MDT's Butte and Great Falls Districts: <ul style="list-style-type: none"> RW131 Permit for utilities located in the right-of-way RW20 Permit for encroachment in the right-of-way RW20S Permit for attachment of utilities to structures RW20A Environmental Checklist required for any projects not highway related |

continued

Table 5-9 (continued)
Summary of Impacts Described in the FEIS

| Resource | No-Action Alternative | Preferred Alternative South Helena/Capitol/Custer | Alternative 2 South Helena/Capitol/ Forestvale |
|---|---|--|--|
| Permits (cont'd.) | | | <ul style="list-style-type: none"> Approach Permit for access to interstate |
| Relationship of Short-Term Use vs. Long-Term Productivity | <ul style="list-style-type: none"> No local- or short-term use of the environment. No enhancement to long-term productivity. Traffic mobility, access and motorist safety would continue to decline. | <ul style="list-style-type: none"> Short-term uses: Disruptions in traffic and economic conditions for businesses during construction; increase in noise and air pollution during construction; lost vegetation; and displaced wildlife. Long-term uses: Improved safety and mobility; replacement and/or reconstruction of aging infrastructure; improved use of energy for vehicular fuel consumption; enhancement of traffic capacity; replacement of wetland values lost; improvements in economic conditions by improved access and mobility; improved property value due to improved access. | <ul style="list-style-type: none"> Short-term uses: Disruptions in traffic and economic conditions for businesses during construction; increase in noise and air pollution during construction; lost vegetation; and displaced wildlife. Long-term uses: Improved safety and mobility; replacement and/or reconstruction of aging infrastructure; improved use of energy for vehicular fuel consumption; enhancement of traffic capacity; replacement of wetland values lost; improvements in economic conditions by improved access and mobility; improved property value due to improved access. |

continued

Table 5-9 (continued)
Summary of Impacts Described in the FEIS

| Resource | No-Action Alternative | Preferred Alternative South Helena/Capitol/Custer | Alternative 2 South Helena/Capitol/ Forestvale |
|--|---|---|---|
| Irreversible & Irretrievable Commitment of Resources | <ul style="list-style-type: none"> Commitments of resources for maintenance and repairs would continue and would likely increase as conditions worsen. | <ul style="list-style-type: none"> Commitment of natural, physical, human and fiscal resources, fossil fuels, labor and construction materials. These materials are not in short supply and would not have an adverse effect upon continued availability of these resources. | <ul style="list-style-type: none"> Commitment of natural, physical, human and fiscal resources, fossil fuels, labor and construction materials. These materials are not in short supply and would not have an adverse effect upon continued availability of these resources. |
| Section 4(f)/6(f) | <ul style="list-style-type: none"> No impacts. | <ul style="list-style-type: none"> Construction easement required for bridge piers on the Montana Rail Link/Northern Pacific Railroad property. | <ul style="list-style-type: none"> Construction easement required for bridge piers on the Montana Rail Link/Northern Pacific Railroad property. |

5.7 Summary of Mitigation

Table 5-10 and Table 5-11 summarize the mitigation measures for impacts described in this FEIS for the Preferred Alternative (Alternative 1) and Alternative 2, respectively.

Table 5-10
Summary of Mitigation Measures for the Preferred Alternative

| Resource | Mitigation Measures |
|----------|--|
| Land Use | <p>No mitigation is required by MDT or FHWA, since there are no direct impacts anticipated.</p> <p>Local jurisdictions with land use powers could mitigate for the indirect impacts. Mitigation measures that could be employed by local planning jurisdictions include:</p> <ul style="list-style-type: none"> • Control the location of development through the local planning process. • Stipulate in zoning and land use plans that development occur in designated growth areas. • Plan future local infrastructure needs to allow for development in areas where it is not currently planned. • Coordination between land use and transportation planners for more integrated approaches to land use, transportation, and environmental planning and review, including Smart Growth strategies. |
| Seismic | <p>To mitigate seismic impacts to structures under MDT's jurisdiction, all transportation structures constructed, as part of the Preferred Alternative, will be designed in accordance with AASHTO Seismic Performance Category B.</p> <p>To mitigate seismic impacts to structures under other agency jurisdiction, the following guidelines could be followed by local planning agencies for any new structures constructed along the I-15 Corridor:</p> <ul style="list-style-type: none"> • Code changes due to findings from the HAZUS analysis should be incorporated into the design criteria for all construction, highway or otherwise, in the study area. • All buildings along the corridor should be designed according to current and future city and county codes, including Uniform Building Code (UBC) Seismic Zone 3 design criteria. • Special consideration should be given to the foundation design of any structures located in areas with a susceptibility to liquefaction. |
| Farmland | <p>No mitigation is required by the NRCS for impacts to farmlands for this alternative.</p> |

continued

Table 5-10 (continued)
Summary of Mitigation Measures for the Preferred Alternative

| Resource | Mitigation Measures |
|---------------------------|--|
| Farmland (cont'd.) | There are no mitigation measures necessary for indirect impacts to farmland. However, local planning boards could implement measures to limit the conversion of farmland to development, such as through zoning designations or purchasing open space. |
| Social | No mitigation is required. |
| Environmental Justice | No mitigation is required. |
| Right-of-Way/ Relocations | The acquisition of land or improvements for highway construction is governed by state and federal laws and regulations designed to protect both the landowners and taxpaying public. Landowners affected are entitled to receive fair market value for any land or buildings acquired and any damages to remaining land due to the effects of highway construction. This project will be developed in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (P.L. 91-646 as amended), (42 U.S.C. 4601, et. seq.) and the Uniform Relocations Act Amendments of 1987 (P.L. 100-17). |
| Economic Conditions | <p>Any signs or landscaping displaced by construction will be replaced as coordinated between MDT and the landowner. No mitigation of indirect impacts is required.</p> <p>Local planning boards may implement measures to control the location and amount of development that could occur as a result of this alternative.</p> <p>Mitigation measures identified for construction-related economic impacts could include maintaining accurate and up-to-date construction information for business enterprises and the public via public announcements and/or electronic signing and keeping access as open as possible.</p> |
| Air Quality | No mitigation is required. |
| Noise | <p>Noise mitigation will be further defined during the final design process. The following information summarizes the conceptual recommendations that have resulted from the noise analysis.</p> <ul style="list-style-type: none"> Mitigation is not initially recommended for the residential mobile home park and neighboring residences located southwest of the Cedar Street/I-15 interchange, receptors SSW7 and SSW9-SSW18. The development of the mobile home park occurred after original construction of I-15. The neighboring permanent homes, however, were in existence prior to development of the interstate. Other considerations are additional noise sources (proximity of railroad and airport), constructability of a barrier at this location, and the desires of the impacted residents. Mitigation will be reconsidered during final design if there is a change in conceptual design. |

continued

Table 5-10 (continued)
Summary of Mitigation Measures for the Preferred Alternative

| Resource | Mitigation Measures |
|-----------------------------|---|
| Noise (cont'd.) | <ul style="list-style-type: none"> • Mitigation is not recommended for Receptor NNE1, the lone residence located to the north of Custer Avenue, east of I-15. A noise barrier along Custer Avenue, the primary noise source for this location, cannot be continuous due to the existing access to the property. A break in the wall would diminish its effectiveness. The construction of any noise barrier that would succeed in reducing noise levels by the required six decibels would exceed the MDT cost-effective index. Also, at the time of this documentation there were future plans to convert the use of this land from residential to commercial. • Mitigation is not recommended for the receptors located within the vicinity of the Capitol interchange. Receptors NW5, NW6, NW8, and SW3 are all motels adjacent to the interchange. Generally, mitigation is not considered for motels because a noise barrier may negatively impact the motel's visibility from travelers on passing roadways. For this reason, no mitigation is proposed for any of these sites. • The results of this noise study will be provided to all agencies with land planning responsibilities in the area. <p>Temporary noise impacts may occur during the construction phase for this project. The operation of heavy equipment (e.g., bulldozer) or use of power tools (e.g., jackhammer) in close proximity to the residences within the study area may create an undesirable noise condition. In an effort to limit construction noise impacts, noisy construction activities will be limited to certain hours of the day if possible. The city of Helena does not limit construction work to specific time periods of the day, but it is recommended that, whenever possible, these activities occur between 7:00 a.m. and 7:00 p.m.</p> |
| Water Resources/ Quality | <p>Mitigation measures that will be implemented during construction to minimize direct and indirect impacts to water resources include:</p> <ul style="list-style-type: none"> • All work in and adjacent to wetlands and water resources will follow state, federal, and local permit requirements. • A Storm Water Pollution Prevention Plan (SWPPP) employing Best Management Practices for controlling erosion and sediment transport will be implemented in the project area. • Development of a revegetation plan, erosion control plan, and stormwater pollution prevention plan will be coordinated with appropriate permitting and resource agencies. |

continued

Table 5-10 (continued)
Summary of Mitigation Measures for the Preferred Alternative

| Resource | Mitigation Measures |
|----------|---|
| Wetlands | <p>The estimated wetland impacts (0.5 hectare [1.2 acre]) are based on conceptual design and have been avoided and/or minimized as much as can be determined with the conceptual design. Avoidance and minimization of wetland impacts will continue in final design.</p> <p>Compensatory mitigation for loss of wetlands will be pursued under the MDT Interagency Wetland Group operating procedures. Possible opportunities include:</p> <ol style="list-style-type: none"> 1) MDT currently owns the property containing Wetland 12 (the large gravel pit wetland), as well as an 8-hectare (20-acre) parcel immediately adjacent to the east. These properties were purchased with the intent of using the 8- hectare (20-acre) parcel as a gravel source for the Forestvale interchange project, then designing and reclaiming the area as a wetland mitigation site. This would be accomplished by excavating to existing groundwater levels as determined by monitoring wells that have been in place at the existing gravel pit wetland for several years. However, a number of issues are associated with this site: a) lower groundwater levels than initially estimated, and b) will borrow material be removed from the site for proposed improvements? 2) Another wetland mitigation opportunity may exist in association with lower Tenmile Creek. The Lower Tenmile Creek Watershed Group is looking at potential stream and wetland restoration projects along Tenmile Creek as part of activities associated with restoring the watershed. As a result of these efforts by the group, there may be several potential restoration projects that MDT could participate in as a cooperator and provide MDT with credits in meeting wetland mitigation credit objectives for wetland impacts in the watershed. MDT is cooperating with the various partners in the Lower Tenmile Creek Watershed Group and Inter-agency Wetland Group (IAWG) members to identify mitigation projects suitable for MDT's needs at this time. <p>The following general measures will be required to minimize disturbance of wetlands and other Waters of the U.S. during construction:</p> <ul style="list-style-type: none"> • Acceptable erosion control devices and BMPs will be installed at the edges of wetlands and other Waters of the U.S. prior to construction. All exposed soils will be permanently stabilized at the earliest practicable date. A SWPPP will be prepared and submitted to DEQ in compliance with their Montana Pollution Discharge Elimination System (MPDES) regulations. BMPs will be included in the design of this plan using guidelines as established in MDT's Erosion and Sediment Control BMP Reference and Field Manual. The objective is to minimize erosion of disturbed areas during and following disturbance. Regular inspections of erosion control devices will be carried out in compliance with MPDES regulations. |

continued

Table 5-10 (continued)
Summary of Mitigation Measures for the Preferred Alternative

| Resource | Mitigation Measures |
|--|---|
| Wetlands (cont'd.) | <ul style="list-style-type: none"> Temporarily disturbed wetland areas will be revegetated with desirable species as specified by MDT at the earliest practicable date following disturbance and comply with MPDES and Section 404 permit conditions. <p>All work in and adjacent to wetlands and water resources will follow state, federal, and local permit requirements.</p> |
| Vegetation, Wildlife and Aquatic Resources | <p>The following mitigation measures will be implemented by MDT, as necessary, during final design to minimize impacts to terrestrial and aquatic resources:</p> <ul style="list-style-type: none"> Raptor proofing of rural overhead power lines that are relocated in association with the project will be included in accordance with MDT policies. While mitigation is not required for the relatively low number of deer-vehicle collisions, fencing options will be explored during final design. Appropriate measures will be taken to prevent the introduction or spread of noxious weeds; however, project-specific control methods are not recommended in this document. In accordance with 7-22-2152 MCA and 60-2-208 MCA, MDT will re-establish a permanent desirable vegetation community along all areas disturbed by proposed construction. A set of revegetation special provisions will be developed by MDT Botanist that must be followed by the construction contractor. The seeding provisions developed for the project will be forwarded to the responsible county weed board for approval. <p>Additionally, a special provision is typically included in bid documents that remind contractors to comply with MDT Standard Specification for Noxious Weed Management.</p> <p>Weed management activities are the responsibility of the contractor at borrow pits, aggregate sources, staging and storage areas, pavement processing plant sites, etc. that are selected/provided by the contractor. These activities are coordinated between the contractor and the county weed board. The weed board determines any weed management requirements, and the contractor is responsible to the board for meeting those requirements. Consequently, weed management activities at these ancillary sites are generally beyond MDT's jurisdiction, responsibility and authority.</p> |

continued

Table 5-10 (continued)
Summary of Mitigation Measures for the Preferred Alternative

| Resource | Mitigation Measures |
|--|--|
| Vegetation, Wildlife and Aquatic Resources (cont'd.) | <ul style="list-style-type: none"> Acceptable erosion/sedimentation control devices will be installed at the edges of wetlands and other Waters of the U.S. prior to construction to minimize impacts to aquatic resources. All exposed soils will be permanently stabilized at the earliest practicable date. A SWPPP will be prepared and submitted to DEQ in compliance with their Montana Pollution Discharge Elimination System (MPDES) regulations. BMPs will be included in the design of this plan using guidelines as established in MDT's Erosion and Sediment Control BMP Reference and Field Manual. The objective is to minimize erosion of disturbed areas during and following disturbance. Regular inspections of erosion control devices will be carried out in compliance with MPDES regulations. <p>All work in and adjacent to wetlands and water resources will follow state, federal, and local permit requirements.</p> |
| Floodplains | No mitigation is required. |
| Wild & Scenic Rivers | No mitigation is required. |
| Threatened and Endangered Species | <p>No mitigation is required. The following conservation measures are recommended to ensure that any impacts to bald eagles and black-tailed prairie dogs are minimized:</p> <ul style="list-style-type: none"> Bald eagle nesting status in the study area will be confirmed within one year of initiation of construction of each segment, prior to construction via, at a minimum, coordination with MFWP biologists and a MNHP records check. Depending on the location of such nests, if any, appropriate spacial and temporal construction restrictions may be warranted. Further coordination with the USFWS may be required should new nest sites ultimately be discovered in the study area. Raptor proofing of rural overhead power lines that are relocated in association with the project will be included in accordance with MDT policies. The location for construction-related activities, such as staging and borrow/gravel source activities, are independently determined by the construction contractor, who is responsible for compliance with all laws and activities associated with those activities. If MDT becomes aware of any threatened, endangered, proposed or candidate species located in the vicinity of these activities, they will inform the contractor of those locations and of potential restrictions that may be associated with avoiding impacts to those species. MDT will also recommend that the contractor contact and coordinate with the USFWS. |

continued

Table 5-10 (continued)
Summary of Mitigation Measures for the Preferred Alternative

| Resource | Mitigation Measures |
|--------------------|--|
| Cultural Resources | No mitigation is required. |
| Hazardous Waste | <p>To mitigate direct impacts to hazardous waste sites, further environmental investigation of the properties with potential environmental risks will be conducted prior to construction of this alternative.</p> <p>A Phase II Investigation was completed for the MRL property that could be affected by the I-15 bridge replacement. Soil and groundwater samples were collected from 8 soil borings and 2 surface soil locations in the area of the I-15 bridge/rail yard. Elevated concentrations of lead were detected in several of the soil borings and in the two surface soil samples collected near bridge caissons in the rail yard. The highest lead concentration detected was 3,800 mg/kg (parts per million) in one of the surface soil samples. This concentration is considerably higher than residential standards but is not unusual for an industrial setting. Construction workers will be made aware of the lead concentrations in the soil and will take precautions to minimize dust generation and utilize dust control measures during construction activities.</p> <p>If the removal of any USTs and/or UST systems is required, the removal work will be conducted in accordance with the Administrative Rules of Montana (ARM) Title 17, Chapter 56, Sub-Chapter 7, Rule 17.56.702, Permanent Closure and Changes-In-Service. This rule provides specific procedures for the closure and handling of a UST system and associated materials, and provides for the proper management of worker and public safety during construction.</p> <p>Special provisions will detail proper handling of anticipated and unanticipated contaminated materials during the construction phase of the project. A site-specific Health and Safety Plan will be required as part of the contractor submittals for work involving known contaminated material. Any excavation, pumping, and/or dewatering activities of contaminated soils or waters requires proper treatment and disposal.</p> |
| Visual | <p>Mitigation measures for direct impacts to the visual character of the I-15 Corridor and newly constructed or widened cross streets include:</p> <ul style="list-style-type: none"> • Provide architectural interest or color into retaining wall design, bridges and other structural features. • All new structures, signing, lighting, etc. related to future highway improvements will be consistent with local standards and guidelines, and MDT safety specifications. • Revegetate disturbed areas as soon as practicable, consistent with adjacent landscape features and with desirable species as specified by the MDT Botanist, while still adhering to safety requirements necessary in clear zones. Coordinate with local municipalities and other landowners to replace important landscaping features lost to construction impacts. |

continued

Table 5-10 (continued)
Summary of Mitigation Measures for the Preferred Alternative

| Resource | Mitigation Measures |
|----------------------|---|
| Visual (cont'd.) | <p>To address potential indirect visual impacts related to future development by others:</p> <ul style="list-style-type: none"> Local planning boards could use zoning, land use planning and open space purchases to provide protection for future visual conditions. |
| Parks and Recreation | No mitigation is required. |
| Section 4(f)/6(f) | No mitigation is required. |
| Construction | <p>The following measures will be reviewed to mitigate construction impacts on air quality and will be incorporated into the project as determined appropriate for use:</p> <ul style="list-style-type: none"> Suppress dust through watering or dust palliative. Revegetate areas disturbed by clearing and grubbing activities. Minimize off-site tracking of mud and debris by stabilizing temporary construction access roads. <p>The following measures will be reviewed to mitigate noise due to construction and will be incorporated into the project as determined appropriate for use:</p> <ul style="list-style-type: none"> Coordinate with MDT, the contractor, and residents or business owners to limit these impacts to certain times of day. Minimize construction duration in residential areas, as much as possible. Avoid nighttime activities in residential areas, as much as possible. Re-route truck traffic away from residential streets, where possible. Combine noisy operations to occur in the same period. Conduct pile driving and other high-noise activities during daytime construction (generally 7am to 7pm), where possible. <p>When construction time is restricted to certain daytime hours, the overall duration of project construction would likely increase.</p> <p>The following measures will be reviewed to prevent negative impacts to water quality and violation of water quality standards to waterways in the study area. Appropriate measures will be included in the construction special provisions and could also be requirements identified in the permitting process. All work in and adjacent to wetlands and water resources will follow state, federal, and local permit requirements.</p> <ul style="list-style-type: none"> Implement temporary and permanent BMPs for drainage way protection and erosion and sediment control as required by local and state permitting requirements. |

continued

Table 5-10 (continued)
Summary of Mitigation Measures for the Preferred Alternative

| Resource | Mitigation Measures |
|---------------------------|--|
| Construction (cont'd.) | <ul style="list-style-type: none"> • Avoid indirect and temporary impacts to wetlands or other areas of important habitat value in addition to those impacted by the project itself. • Temporary and permanent BMPs may be required as mitigation along Custer Avenue to prevent erosion and sedimentation in the wetlands on the north and south side of the street between N. Montana Avenue and I-15 and to prevent spilled fuels or other hazardous materials from entering the wetlands. • Coordination with local water districts to ensure water flow in the canal will be uninterrupted during construction at Lincoln Road. Temporary and permanent BMPs may be required along the canal to prevent erosion and sedimentation caused by stormwater runoff and to prevent spilled fuels or other hazardous materials from entering the canal. <p>The following measures will be reviewed to minimize impacts to traffic circulation during construction and will be incorporated into the project as determined appropriate for use:</p> <ul style="list-style-type: none"> • Develop traffic management plans. • Coordinate with emergency service providers to minimize delays and ensure access to properties. • Maintain traffic flow during peak travel times by minimizing lane closures, if possible. • Coordinate detour routes to avoid overloading local streets with detour traffic, where possible. • Maintain access to local businesses and residences. • Use signage, T.V. and radio announcements to announce and advertise timing of road closures. • During peak travel times, keep as many lanes as possible open by temporarily shifting lanes within the existing framework of the roadway. • Develop detour routes for potential nighttime closures of I-15 and arterial roadways. <p>Mitigation for construction-related visual impacts will be reviewed and incorporated into the project as determined appropriate for use:</p> <ul style="list-style-type: none"> • Store equipment and materials in designated areas only. • Remove any unused detour pavement or signs. |

continued

Table 5-10 (continued)
Summary of Mitigation Measures for the Preferred Alternative

| Resource | Mitigation Measures |
|----------|---|
| Permits | <p>Because no water resources are directly impacted by the Preferred Alternative, a 124SPA Stream Protection Permit and Section 318 authorization are not needed. The following permits will be acquired prior to any relevant disturbance:</p> <ul style="list-style-type: none"> • A weed control plan approved by Lewis & Clark and Jefferson counties. • The Preferred Alternative may require the following permits under the Clean Water Act (33 U.S.C. 1251-1376): <ul style="list-style-type: none"> – A <i>Section 402</i>/ MPDES permit from the Montana Department of Environmental Quality's Permitting and Compliance Division. – A <i>Section 404</i> permit from the U.S. Army Corps of Engineers (for filling in jurisdictional wetlands or Waters of the U.S.). • Air and Waste Management Bureau, asphalt plant and crusher permit <p>The Preferred Alternative may require the following permits, if applicable, for relocation of utilities, from the Montana Department of Transportation's Butte and Great Falls Districts:</p> <ul style="list-style-type: none"> • RW131 Permit for utilities located in the right-of-way • RW20 Permit for encroachment in the right-of-way • RW20S Permit for attachment of utilities to structures • RW20A Environmental Checklist required for any projects not highway related • Approach Permit for access to interstate |
| Land Use | <p>No mitigation is required, since there are no direct impacts anticipated.</p> <p>Local jurisdictions with land use powers could mitigate for the indirect impacts. Mitigation measures that could be employed by local planning jurisdictions include:</p> <ul style="list-style-type: none"> • Control the location of development through the local planning process. • Stipulate in zoning and land use plans that development occur in designated growth areas. • Plan future local infrastructure needs to allow for development in areas where it is not currently planned. • Coordination between land use and transportation planners for more integrated approaches to land use, transportation, and environmental planning and review, including Smart Growth strategies. |

continued

Table 5-11
Summary of Mitigation Measures for Alternative 2

| Resource | Mitigation Measures |
|---------------------------|--|
| Seismic | <p>To mitigate seismic impacts to structures under MDT's jurisdiction, all transportation structures constructed, as part of the Preferred Alternative, will be designed in accordance with AASHTO Seismic Performance Category B.</p> <p>To mitigate seismic impacts to structures under other agency jurisdiction, the following guidelines could be followed by local planning agencies for any new structures constructed along the I-15 Corridor:</p> <ul style="list-style-type: none"> • Code changes due to findings from the HAZUS analysis should be incorporated into the design criteria for all construction, highway or otherwise, in the study area. • All buildings along the corridor should be designed according to current and future city and county codes, including Uniform Building Code (UBC) Seismic Zone 3 design criteria. • Special consideration should be given to the foundation design of any structures located in areas with a susceptibility to liquefaction. |
| Farmland | <p>No mitigation is required by the NRCS for impacts to farmlands for this alternative.</p> <p>Mitigation will be provided to agricultural properties directly impacted by this alternative consistent with MDT policy and the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (P.L. 91-646 as amended), (42 U.S.C. 4601, et. seq.) and the Uniform Relocations Act Amendments of 1987 (P.L. 100-17). All irrigation pipes and ditches would be replaced in-kind. Property owners will be compensated for crop damage, if appropriate.</p> <p>There are no mitigation measures necessary for indirect impacts to farmland. However, local planning boards could implement measures to limit the conversion of farmland to development, such as through zoning designations or purchasing open space.</p> |
| Social | No mitigation is required. |
| Environmental Justice | No mitigation is required. |
| Right-of-Way/ Relocations | <p>The acquisition of land or improvements for highway construction is governed by state and federal laws and regulations designed to protect both the landowners and taxpaying public. Landowners affected are entitled to receive fair market value for any land or buildings acquired and any damages to remaining land due to the effects of highway construction. This project will be developed in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (P.L. 91-646 as amended), (42 U.S.C. 4601, et. seq.) and the Uniform Relocations Act Amendments of 1987 (P.L. 100-17).</p> |

continued

Table 5-11 (continued)
Summary of Mitigation Measures for Alternative 2

| Resource | Mitigation Measures |
|---------------------|--|
| Economic Conditions | <p>Any signs or landscaping displaced by construction will be replaced as coordinated between MDT and the landowner. No mitigation of indirect impacts is required.</p> <p>Local planning boards may implement measures to control the location and amount of development that could occur as a result of this alternative.</p> <p>Mitigation measures identified for construction-related economic impacts could include maintaining accurate and up-to-date construction information for business enterprises and the public via public announcements and/or electronic signing and keeping access as open as possible.</p> |
| Air Quality | No mitigation is required. |
| Noise | <p>Noise mitigation will be further defined during the final design process. The following information summarizes the conceptual recommendations that have resulted from the noise analysis.</p> <ul style="list-style-type: none"> • Mitigation is not recommended for the residential mobile home park and neighboring residences located southwest of the Cedar Street/I-15 interchange, because this development occurred well after the construction of the interstate. However, mitigation will be reconsidered during final design if the horizontal and/or vertical roadway alignment shifts compared to the conceptual design. • Mitigation is not recommended for Receptor NNE1, the lone residence located to the north of Custer Avenue, east of I-15. A noise barrier along Custer Avenue, the primary noise source for this location, cannot be continuous due to the existing access to the property. A break in the wall would diminish its effectiveness. The construction of any noise barrier that would succeed in reducing noise levels by the required six decibels would exceed the MDT cost-effective index. Also, at the time of this documentation there were future plans to convert the use of this land from residential to commercial. • Mitigation is not recommended for the receptors located within the vicinity of the Capitol interchange. Receptors NW5, NW6, NW8, and SW3 are all motels adjacent to the interchange. Generally, mitigation is not considered for motels because a noise barrier may negatively impact the motel's visibility from travelers on passing roadways. For this reason, no mitigation is proposed for any of these sites. • The results of this noise study will be provided to all agencies with land planning responsibilities in the area. |

continued

Table 5-11 (continued)
Summary of Mitigation Measures for Alternative 2

| Resource | Mitigation Measures |
|-----------------------------|---|
| Noise (cont'd.) | <ul style="list-style-type: none"> • Mitigation for Receptors R1, R2 and R3 (see Figure 5-1) is not recommended. A noise barrier at this location, though feasible, is not considered reasonable because it would exceed the MDT cost-effective index. However, mitigation will be considered if final design changes significantly compared to conceptual design. • Mitigation for the residences located west of I-15 in the Treasure State Acres (R6) subdivision is not recommended. A noise barrier at this location, though feasible, is not considered reasonable because the difference in noise levels between the No-Action Alternative and the Preferred Alternative is approximately 3 decibels. MDT guidelines suggest that a difference of less than three decibels indicates a noise barrier may not be reasonable. For this reason, and because this subdivision was developed well after the construction of the interstate, no mitigation is proposed for these residences. <p>Temporary noise impacts may occur during the construction phase for this project. The operation of heavy equipment (e.g., bulldozer) or use of power tools (e.g., jackhammer) in close proximity to the residences within the study area may create an undesirable noise condition. In an effort to limit construction noise impacts, noisy construction activities will be limited to certain hours of the day if possible. The city of Helena does not limit construction work to specific time periods of the day, but it is recommended that, whenever possible, these activities occur between 7:00 a.m. and 7:00 p.m.</p> |
| Water Resources/ Quality | <p>Mitigation measures that will be implemented during construction to minimize direct and indirect impacts to water resources include:</p> <ul style="list-style-type: none"> • All work in and adjacent to wetlands and water resources will follow state, federal, and local permit requirements. • A Storm Water Pollution Prevention Plan (SWPPP) employing Best Management Practices for controlling erosion sediment transport will be implemented in the project area. • Development of a revegetation plan, erosion control plan, and stormwater pollution prevention plan will be coordinated with appropriate permitting and resource agencies. • Implementation of BMPs to protect the 303(d)-listed Tenmile Creek from additional impacts. |
| Wetlands | <p>The estimated wetland impacts (jurisdictional, 22 square meters [240 square feet]; non-jurisdictional 2.12 hectare [5.54 acre]) are based on conceptual design and have been avoided and/or minimized as much as can be determined with the conceptual design. Avoidance and minimization of wetland impacts will continue in final design.</p> |

continued

Table 5-11 (continued)
Summary of Mitigation Measures for Alternative 2

| Resource | Mitigation Measures |
|--------------------|--|
| Wetlands (cont'd.) | <p>Compensatory mitigation for loss of wetlands will be pursued under the MDT Interagency Wetland Group operating procedures. Possible opportunities include:</p> <ol style="list-style-type: none"> 1) MDT currently owns the property containing Wetland 12 (the large gravel pit wetland), as well as an 8-hectare (20-acre) parcel immediately adjacent to the east. These properties were purchased with the intent of using the 8-hectare (20-acre) parcel as a gravel source for the Forestvale interchange project, then designing and reclaiming the area as a wetland mitigation site. This would be accomplished by excavating to existing groundwater levels as determined by monitoring wells that have been in place at the existing gravel pit wetland for several years. However, a number of issues are associated with this site: a) lower groundwater levels than initially estimated, and b) will borrow material be removed from the site for proposed improvements? 2) Another wetland mitigation opportunity may exist in association with lower Tenmile Creek. The Lower Tenmile Creek Watershed Group is looking at potential stream and wetland restoration projects along Tenmile Creek as part of activities associated with restoring the watershed. As a result of these efforts by the group, there may be several potential restoration projects that MDT could participate in as a cooperator and provide MDT with credits in meeting wetland mitigation credit objectives for wetland impacts in the watershed. MDT is cooperating with the various partners in the Lower Tenmile Creek Watershed Group and Inter-agency Wetland Group (IAWG) members to identify mitigation projects suitable for MDT's needs at this time. <p>The following general measures will be required to minimize disturbance of wetlands and other Waters of the U.S. during construction:</p> <ul style="list-style-type: none"> • Acceptable erosion control devices and BMPs will be installed at the edges of wetlands and other Waters of the U.S. prior to construction. All exposed soils will be permanently stabilized at the earliest practicable date. A SWPPP will be prepared and submitted to DEQ in compliance with their Montana Pollution Discharge Elimination System (MPDES) regulations. BMPs will be included in the design of this plan using guidelines as established in MDT's Erosion and Sediment Control BMP Reference and Field Manual. The objective is to minimize erosion of disturbed areas during and following disturbance. Regular inspections of erosion control devices will be carried out in compliance with MPDES regulations. |

continued

Table 5-11 (continued)
Summary of Mitigation Measures for Alternative 2

| Resource | Mitigation Measures |
|--|---|
| Wetlands (cont'd.) | <ul style="list-style-type: none"> Temporarily disturbed wetland areas will be revegetated with desirable species as specified by MDT at the earliest practicable date following disturbance and comply with MPDES and Section 404 permit conditions. <p>All work in and adjacent to wetlands and water resources will follow state, federal, and local permit requirements.</p> |
| Vegetation, Wildlife and Aquatic Resources | <p>The following mitigation measures will be implemented by MDT, as necessary, during final design to minimize impacts to terrestrial and aquatic resources:</p> <ul style="list-style-type: none"> Raptor proofing of rural overhead power lines that are relocated in association with the project will be included in accordance with MDT policies. While mitigation is not required for the relatively low number of deer-vehicle collisions, fencing options will be explored during final design. Appropriate measures will be taken to prevent the introduction or spread of noxious weeds; however, project-specific control methods are not recommended in this document. In accordance with 7-22-2152 MCA and 60-2-208 MCA, MDT will re-establish a permanent desirable vegetation community along all areas disturbed by proposed construction. A set of revegetation special provisions will be developed by MDT Botanist that must be followed by the construction contractor. The seeding provisions developed for the project will be forwarded to the responsible county weed board for approval. <p>Additionally, a special provision is typically included in bid documents that remind contractors to comply with MDT Standard Specification for Noxious Weed Management.</p> <p>Weed management activities are the responsibility of the contractor at borrow pits, aggregate sources, staging and storage areas, pavement processing plant sites, etc. that are selected/provided by the contractor. These activities are coordinated between the contractor and the county weed board. The weed board determines any weed management requirements, and the contractor is responsible to the board for meeting those requirements. Consequently, weed management activities at these ancillary sites are generally beyond MDT's jurisdiction, responsibility and authority.</p> |

continued

Table 5-11 (continued)
Summary of Mitigation Measures for Alternative 2

| Resource | Mitigation Measures |
|--|---|
| Vegetation, Wildlife & Aquatic Resources (cont'd.) | <ul style="list-style-type: none"> Acceptable erosion/sedimentation control devices will be installed at the edges of wetlands and other Waters of the U.S. prior to construction to minimize impacts to aquatic resources. All exposed soils will be permanently stabilized at the earliest practicable date. A SWPPP will be prepared and submitted to DEQ in compliance with their Montana Pollution Discharge Elimination System (MPDES) regulations. BMPs will be included in the design of this plan using guidelines as established in MDT's Erosion and Sediment Control BMP Reference and Field Manual. The objective is to minimize erosion of disturbed areas during and following disturbance. Regular inspections of erosion control devices will be carried out in compliance with MPDES regulations. All work in and adjacent to wetlands and water resources will follow state, federal, and local permit requirements. |
| Floodplains | <ul style="list-style-type: none"> To mitigate the direct impacts for Alternative 2, a floodplain development permit would be required from Lewis & Clark County for the floodplain encroachment associated with the construction of the Forestvale interchange. BMPs will be followed to reduce any temporary or permanent impacts to the Tenmile Creek 100-year floodplain as a result of the transportation improvements evaluated in this document. Specific BMPs to be used in the study area would be determined at the time of final design. There were no indirect impacts to the floodplain identified, and therefore, no mitigation required. |
| Wild and Scenic Rivers | No mitigation is required. |
| Threatened and Endangered Species | <p>No mitigation is required. The following conservation measures are recommended to ensure that any impacts to bald eagles and black-tailed prairie dogs are minimized:</p> <ul style="list-style-type: none"> Bald eagle nesting status in the study area will be confirmed within one year of initiation of construction of each segment prior to construction via, at a minimum, coordination with MFWP biologists and a MNHP records check. Depending on the location of such nests, if any, appropriate spacial and temporal construction restrictions may be warranted. Further coordination with the USFWS may be required should new nest sites ultimately be discovered in the study area. Raptor proofing of rural overhead power lines that are relocated in association with the project will be included in accordance with MDT policies. |

continued

Table 5-11 (continued)
Summary of Mitigation Measures for Alternative 2

| Resource | Mitigation Measures |
|---|--|
| Threatened and Endangered Species (cont'd.) | <ul style="list-style-type: none"> The location for construction-related activities, such as staging and borrow/gravel source activities, are independently determined by the construction contractor, who is responsible for compliance with all laws and activities associated with those activities. If MDT becomes aware of any threatened, endangered, proposed or candidate species located in the vicinity of these activities, they will inform the contractor of those locations and of potential restrictions that may be associated with avoiding impacts to those species. MDT will also recommend that the contractor contact and coordinate with the USFWS. |
| Cultural Resources | No mitigation is required. |
| Hazardous Waste | <p>To mitigate direct impacts to hazardous waste sites, further environmental investigation of the properties with potential environmental risks will be conducted prior to construction of this alternative.</p> <p>A Phase II Investigation was completed for the MRL property that could be affected by the I-15 bridge replacement. Soil and groundwater samples were collected from 8 soil borings and 2 surface soil locations in the area of the I-15 bridge/rail yard. Elevated concentrations of lead were detected in several of the soil borings and in the two surface soil samples collected near bridge caissons in the rail yard. The highest lead concentration detected was 3,800 mg/kg (parts per million) in one of the surface soil samples. This concentration is considerably higher than residential standards but is not unusual for an industrial setting. Construction workers will be made aware of the lead concentrations in the soil and will take precautions to minimize dust generation and utilize dust control measures during construction activities.</p> <p>If the removal of any USTs and/or UST systems is required, the removal work will be conducted in accordance with the Administrative Rules of Montana (ARM) Title 17, Chapter 56, Sub-Chapter 7, Rule 17.56.702, Permanent Closure and Changes-In-Service. This rule provides specific procedures for the closure and handling of a UST system and associated materials, and provides for the proper management of worker and public safety during construction.</p> <p>Special provisions will detail proper handling of anticipated and unanticipated contaminated materials during the construction phase of the project. A site-specific Health and Safety Plan will be required as part of the contractor submittals for work involving known contaminated material. Any excavation, pumping, and/or dewatering activities of contaminated soils or waters requires proper treatment and disposal.</p> |

continued

Table 5-11 (continued)
Summary of Mitigation Measures for Alternative 2

| Resource | Mitigation Measures |
|----------------------|--|
| Visual | <p>Mitigation measures for direct impacts to the visual character of the I-15 Corridor and newly constructed or widened cross streets include:</p> <ul style="list-style-type: none"> • Provide architectural interest or color into retaining wall design, bridges and other structural features. • All new structures, signing, lighting, etc. related to future highway improvements will be consistent with local standards and guidelines, and MDT safety specifications. • Revegetate disturbed areas as soon as practicable, consistent with adjacent landscape features and with desirable species as specified by the MDT Botanist, while still adhering to safety requirements necessary in clear zones. Coordinate with local municipalities and other landowners to replace important landscaping features lost to construction impacts. <p>To address potential indirect visual impacts related to future development by others:</p> <ul style="list-style-type: none"> • Local planning boards could use zoning, land use planning and open space purchases to provide protection for future visual conditions. |
| Parks and Recreation | No mitigation is required. |
| Section 4(f)/6(f) | No mitigation is required. |
| Construction | <ul style="list-style-type: none"> • Coordination with local water/irrigation districts would be required to ensure water flow in the canal would be uninterrupted during construction. • Temporary and permanent BMPs may be required along the canal and Tenmile Creek to prevent erosion and sedimentation caused by storm water runoff and to prevent spilled fuels or other hazardous materials from entering waterways. • Mitigation may also be required to prevent the erosion and sedimentation of the nearby wetland at the northeast quadrant of the interchange. • A floodplain development permit would be required from Lewis & Clark County. <p>The following measures will be reviewed to mitigate construction impacts on air quality and will be incorporated into the project as determined appropriate for use:</p> <ul style="list-style-type: none"> • Suppress dust through watering or dust palliative. • Revegetate areas disturbed by clearing and grubbing activities. • Minimize off-site tracking of mud and debris by stabilizing temporary construction access roads. |

continued

Table 5-11 (continued)
Summary of Mitigation Measures for Alternative 2

| Resource | Mitigation Measures |
|---------------------------|---|
| Construction (cont'd.) | <p>The following measures will be reviewed to mitigate noise due to construction and will be incorporated into the project as determined appropriate for use:</p> <ul style="list-style-type: none"> • Coordinate with MDT, the contractor, and residents or business owners to limit these impacts to certain times of day. • Minimize construction duration in residential areas, as much as possible. • Avoid nighttime activities in residential areas, as much as possible. Re-route truck traffic away from residential streets, where possible. • Combine noisy operations to occur in the same period. • Conduct pile driving and other high-noise activities during daytime construction (generally 7am to 7pm), where possible. <p>When construction time is restricted to certain daytime hours, the overall duration of project construction would likely increase.</p> <p>The following measures will be reviewed to prevent negative impacts to water quality and violation of water quality standards to waterways in the study area. Appropriate measures will be included in the construction special provisions and could also be requirements identified in the permitting process. All work in and adjacent to wetlands and water resources will follow state, federal, and local permit requirements.</p> <ul style="list-style-type: none"> • Implement temporary and permanent BMPs for drainage way protection and erosion and sediment control as required by local and state permitting requirements. • Avoid indirect and temporary impacts to wetlands or other areas of important habitat value in addition to those impacted by the project itself. • Temporary and permanent BMPs may be required as mitigation along Custer Avenue to prevent erosion and sedimentation in the wetlands on the north and south side of the street between N. Montana Avenue and I-15 and to prevent spilled fuels or other hazardous materials from entering the wetlands. • Coordination with local water districts to ensure water flow in the canal will be uninterrupted during construction at Lincoln Road. Temporary and permanent BMPs may be required along the canal to prevent erosion and sedimentation caused by stormwater runoff and to prevent spilled fuels or other hazardous materials from entering the canal. |

continued

Table 5-11 (continued)
Summary of Mitigation Measures for Alternative 2

| Resource | Mitigation Measures |
|---------------------------|---|
| Construction (cont'd.) | <p>The following measures will be reviewed to minimize impacts to traffic circulation during construction and will be incorporated into the project as determined appropriate for use:</p> <ul style="list-style-type: none"> • Develop traffic management plans. • Coordinate with emergency service providers to minimize delays and ensure access to properties. • Maintain traffic flow during peak travel times by minimizing lane closures, if possible. • Coordinate detour routes to avoid overloading local streets with detour traffic, where possible. • Maintain access to local businesses and residences. • Use signage, T.V. and radio announcements to announce and advertise timing of road closures. • During peak travel times, keep as many lanes as possible open by temporarily shifting lanes within the existing framework of the roadway. • Develop detour routes for potential nighttime closures of I-15 and arterial roadways. <p>Mitigation for construction-related visual impacts will be reviewed and incorporated into the project as determined appropriate for use:</p> <ul style="list-style-type: none"> • Store equipment and materials in designated areas only. • Remove any unused detour pavement or signs. |
| Permits | <ul style="list-style-type: none"> • Alternative 2 would be in compliance with the provisions for Water Quality under Section 75-5-401 (2), MCA for Section 318 authorizations for short-term turbidity problems and Stream Protection under 87-5-501 through 509, MCA, inclusive. This authorization should be obtained by the MDT contractor from the DEQ prior to the start of any highway construction. • A 124SPA Stream Protection Permit would be required by the MFWP. This permit would be required depending upon planned highway improvements and the specific impacts to a stream. In Montana, proposed development activities (by governmental agencies) in or near streams that may affect the beds or banks are governed by the Montana Stream Protection Act. The MFWP administers this law, and its purpose is to preserve and protect fish and wildlife resources in their natural existing state. • Alternative 2 would require a floodplain development permit from Lewis & Clark County for floodplain encroachment associated with construction of the Forestvale interchange. |

continued

Table 5-11 (continued)
Summary of Mitigation Measures for Alternative 2

| Resource | Mitigation Measures |
|-------------------|--|
| Permits (cont'd.) | <p>It would be appropriate for MDT to work with MDEQ as it develops TMDLs and associated water quality restoration plans for Tenmile Creek.</p> <p>The following permits will be acquired prior to any relevant disturbance:</p> <ul style="list-style-type: none"> • A weed control plan approved by Lewis & Clark and Jefferson counties. • Alternative 2 may require the following permits under the Clean Water Act (33 U.S.C. 1251-1376): <ul style="list-style-type: none"> – A <i>Section 402</i>/ MPDES permit from the Montana Department of Environmental Quality's Permitting and Compliance Division. – A <i>Section 404</i> permit from the U.S. Army Corps of Engineers (for filling in jurisdictional wetlands or Waters of the U.S.). • Air and Waste Management Bureau, asphalt plant and crusher permit <p>Alternative 2 may require the following permits, if applicable, for relocation of utilities, from the Montana Department of Transportation's Butte and Great Falls Districts:</p> <ul style="list-style-type: none"> • RW131 Permit for utilities located in the right-of-way • RW20 Permit for encroachment in the right-of-way • RW20S Permit for attachment of utilities to structures • RW20A Environmental Checklist required for any projects not highway related • Approach Permit for access to interstate |

CHAPTER 6.0: SECTION 4(f)/6(f) EVALUATION

6.1 Introduction

This chapter discusses natural, historical and recreational resources subject to protection under Section 4(f) of the Department of Transportation Act and Section 6(f) of the Land and Water Conservation Act. The Chapter describes 4(f) and 6(f) properties located within the study area, potential impacts to those properties that could result from each of the alternatives being studied, actions taken to avoid or minimize potential impacts, and, where appropriate, coordination efforts undertaken with the owner or owners of affected properties.

6.2 What is Section 4(f)?

Section 4(f) applies to publicly owned lands which are managed as parks and recreation areas, wildlife or waterfowl refuges, and to all "significant" historic sites regardless of ownership. Impacts to Section 4(f) resources resulting from the need to improve Interstate 15 must be avoided if possible. If avoidance is not feasible and prudent, then all possible planning to minimize harm to these resources must be included in the project. Protection of these resources is covered by Section 4(f) of the Department of Transportation Act of 1966, P.L. 89-670, 80 Stat.934, which was amended in 1983 and 1987, and is now codified at 49 U.S.C. 303.

The pertinent section of the law states:

- (C) The Secretary [of Transportation] may approve a transportation program or project (other than any project for a park road or parkway under Section 204 of title 23) requiring the use of publicly owned land of a public park, recreation area, or wildlife and waterfowl refuge, or land of an historic site of national, State, or local significance (as determined by the Federal, State, or local officials having jurisdiction over the park, area, refuge, or site) only if
 - (1) there is no prudent and feasible alternative to using that land; and
 - (2) the program or project includes all possible planning to minimize harm to the park, recreation area, wildlife and waterfowl refuge, or historic site resulting from such use.

The Federal Highway Administration (FHWA) has adopted regulations (23 CFR 771.135) to guide implementation of this section of federal law. This regulation clarifies that the requirements of Section 4(f) apply only to historic properties on or eligible for the National Register of Historic Places (NRHP) unless the [Federal Highway or Federal Transit] Administration determines otherwise. NRHP sites are also protected by

Section 106 of the National Historic Preservation Act (NHPA) which requires federal agencies to consult with the State Historic Preservation Officer (SHPO) regarding the effect of their undertaking on historic properties. This Section 4(f) evaluation summarizes and incorporates the results of this consultation process.

There are two types of impacts to a designated 4(f) property that require an evaluation and determination as set forth in the regulations:

- ▶ A direct impact to a Section 4(f) property resulting from the taking of a portion or all of the property.
- ▶ Any action by the project, while not amounting to a direct taking, which would “substantially impair” the current use of the property by such intrusions as noise, air or visual impacts, as well as impairment of property access, could constitute a “constructive use” of the 4(f) property.

Both types of impact are discussed in this evaluation.

All of the Section 4(f) resources in the study area are public parks and recreational resources or cultural resources (including both historic and archaeological resources). There are no wildlife or waterfowl refuges along the corridor. For a full description of the Preferred Alternative, Alternative 2 and the No-Action Alternative, refer to Chapter 2.0 of this FEIS.

The Montana Department of Transportation (MDT) is preparing this Section 4(f) Evaluation for Project IR 15-4 (65) 198, I-15 Corridor (Montana City to Lincoln Road) EIS. The FHWA will be responsible for determining that the I-15 Corridor EIS meets the criteria and satisfies the procedures set forth in the 4(f) regulations.

6.3 Section 4(f) Properties: Cultural Resources

Table 6-1 lists the historical and archaeological resources located within the area of potential effect that were determined to be listed on or eligible for the NRHP. These resources are discussed in greater detail in Section 3.17 of this FEIS. Six properties listed on or eligible for inclusion on the NRHP require evaluation under Section 4(f) because of their close proximity to the improvements being considered in the two build alternatives. These properties are shown on **Figure 6-1**, **Figure 6-5** and **Figure 6-6** and are briefly described below along with a description of potential impacts associated with each alternative. Opportunities to avoid or minimize impacts are also described. To ensure confidentiality, archaeological resources are not shown on the figures.

Table 6-1
Summary of Historic and Archaeological Sites

| | Site Number | Site name | Type | NRHP Status | Inside APE* |
|----|-------------|---|-------------------------|----------------------------|---|
| 1. | 24JF697 | Proposed Montana City Archaeological District | Archaeological District | Eligible | Yes |
| 2. | 24JF1719 | Tipi ring site/lithic scatter | Prehistoric | Potentially Eligible | Yes |
| 3. | 24LC1139 | Northern Pacific Railroad | Historic | Eligible under Criterion A | Yes, passes underneath I-15 within city limits |
| 4. | 24LC1786 | Washburn Family Dairy | Historic | Eligible under Criterion C | Yes, near Custer Avenue and realigned north Frontage Road |
| 5. | 24LC787 | Silver Creek School | Historic | Listed in 1980 on NRHP | Yes, near I-15 and Sierra Road |
| 6. | 24LC1784 | Deal House | Historic | Eligible under Criterion C | Yes, eligible buildings near Lincoln Road interchange |

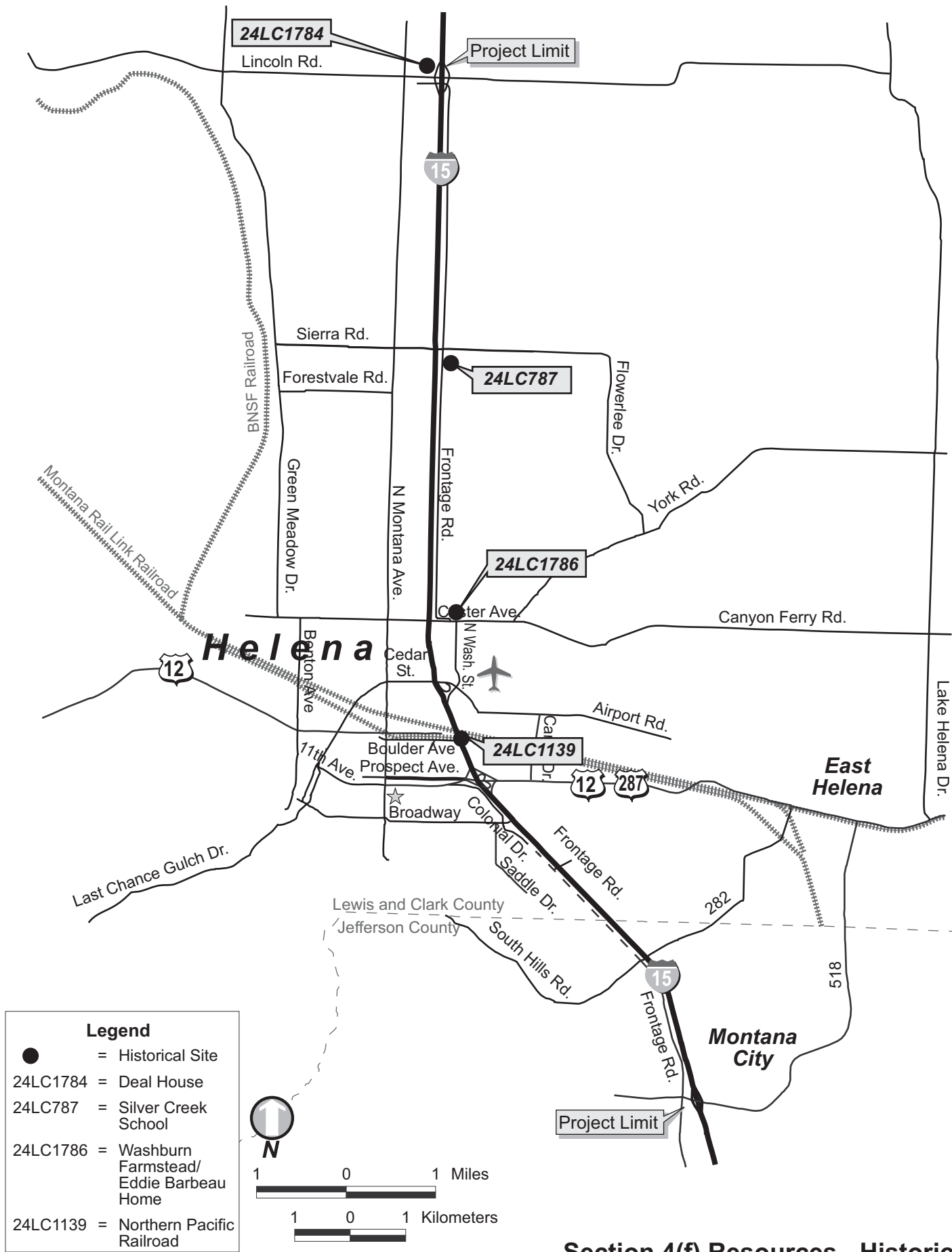
Source: Cultural Resource Inventory, 2002

*Area of Potential Effect

6.3.1 Proposed Montana City Archaeological District

Description of Resource. **Site 24JF697.** The Montana City Archaeological District encompasses approximately 931 hectares (2,300 acres) near the Montana City interchange and contains 31 sites. These properties include quarry sites, tipi rings/stone circle sites, lithic scatter sites, and open occupation sites. Site 24JF1719 (discussed below) is located within the Montana City Archaeological District.

Discussion of Impacts. Improvement of the Montana City interchange is included in both the Preferred Alternative and Alternative 2 and the impacts are expected to be the same. All improvements would take place within existing highway right-of-way in areas previously disturbed by construction. There would be no direct or indirect impacts associated with these improvements. Modification of the interchange and interchange ramps would not change the physical setting of the proposed District nor would it affect in any way the qualities and characteristics which made the District eligible for the NRHP. There would be no changes to the current use of the District that could constitute constructive use of the property. On November 7, 2002, the Montana SHPO concurred with a determination of No Effect. A copy of the SHPO concurrence is included in Volume 2, Appendix B. Since there is no use of the



property and No Effect to the resource, no further evaluation is required under Section 4(f).

6.3.2 Prehistoric Lithic Scatter and Tipi Rings

Description of Resource and Discussion of Impacts: **Site 24JF1719.** This site is located in the vicinity of the Montana City interchange and is also located within the Montana City Archaeological District. As discussed previously, no direct, indirect or constructive use impacts would occur to any of the sites within the District with the Preferred Alternative, Alternative 2 or the No-Action Alternative. The SHPO concurred with this determination for Site 24JF1719 on November 7, 2002. Since there is no use of the property and No Effect to the resource, no further evaluation is required under Section 4(f).

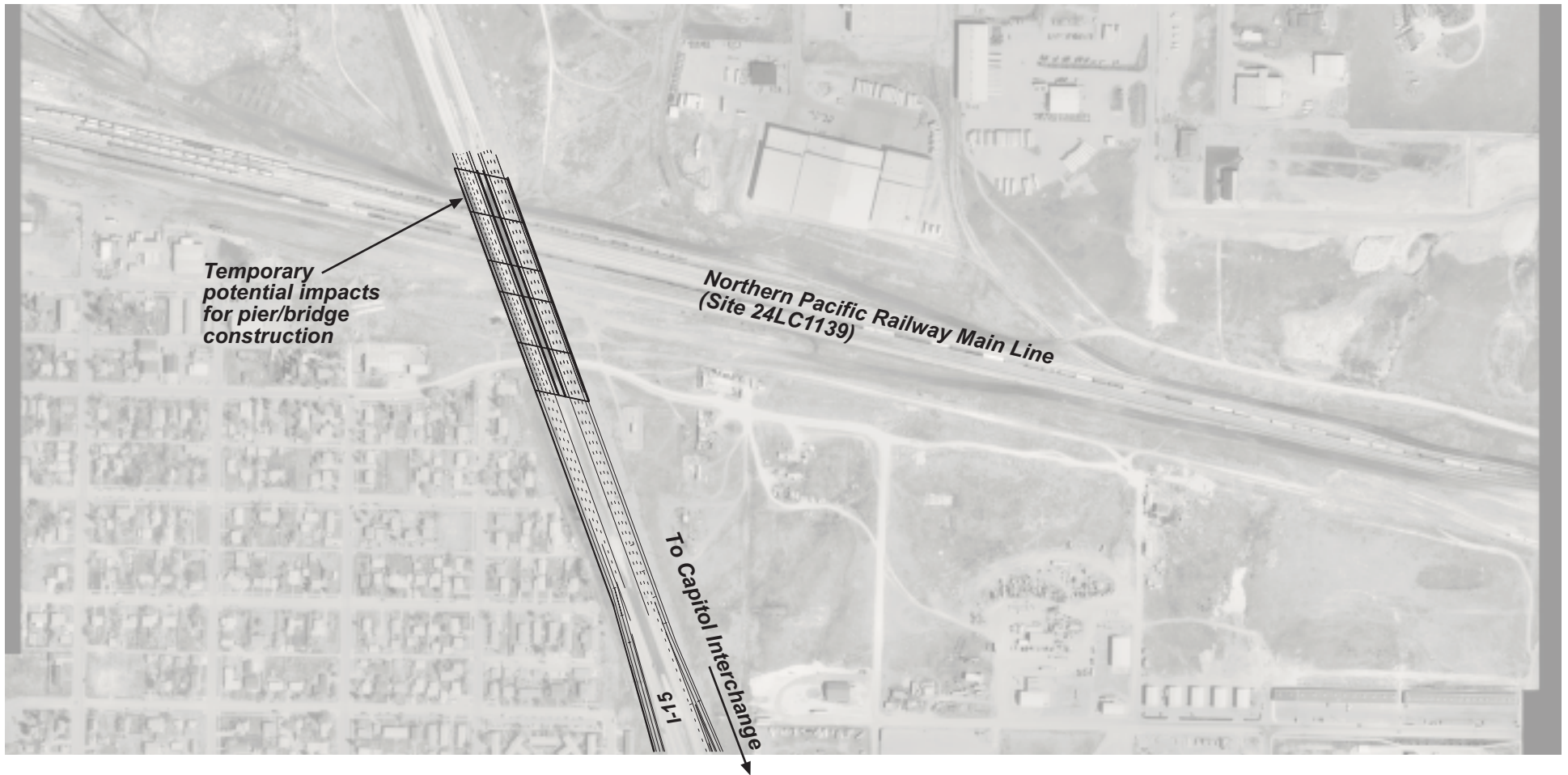
6.3.3 Northern Pacific Railroad

Description of Resource. **Site 24LC1139.** This site is a 122-meter (400-foot) segment of the Northern Pacific Railroad line that passes underneath I-15 in Helena. The segment extends approximately 61 meters (200 feet) east and west of the center of the overpass. The tracks are still used by freight trains. It is eligible for listing in the NRHP under Criterion A for its importance to the socioeconomic development of Montana.

Discussion of Impacts

With the Preferred Alternative two additional auxiliary lanes in each direction would be added to Interstate 15 between the Custer Avenue and Capitol interchanges. With Alternative 2, the auxiliary lanes would extend further north on I-15 to Forestvale Road. At the Northern Pacific Railroad location, the interstate highway passes over the tracks and railyard on a pair of elevated bridge structures, one for northbound traffic and one for southbound. Given the deteriorated condition of the current bridges, they would be replaced with new bridges built wide enough to accommodate the auxiliary lanes, through lanes and roadway shoulders. Construction of the new bridges includes replacement of the existing bridge piers in approximately the same location. The bridge piers would be larger than those that support the present bridges and would likely require acquisition of additional right-of-way or easement from the railroad. This use of property from Site 24LC1139 cannot be avoided with either of the two build alternatives as discussed in Section 6.5.1. A conceptual design is provided in **Figure 6-2**.

With the No-Action Alternative, no improvements would be made to Interstate 15. Therefore, no auxiliary lanes would be added and the twin I-15 bridges over the railroad would not be replaced. The No-Action Alternative will have no direct, indirect or constructive use of the historic Northern Pacific Railroad site.



Use of a small part of the Northern Pacific Railroad property, now owned by the Burlington Northern Santa Fe (BNSF) Railroad and operated by the Montana Rail Link, would be required under the Preferred Alternative and Alternative 2 but would not change the existing function of the railroad. There would be a slight change in the setting of the site, but this change would not impair its function or cause its significance to the history of the area to be diminished. The SHPO concurred on November 25, 2002 with a determination of No Effect to this historic property.

6.3.4 Washburn Farmstead/Eddie Barbeau Home

Description of Resource. **Site 24LC1786.** The Washburn Family Dairy Farmstead and LeRoy "Eddie" Barbeau Residence is located northeast of Custer Avenue and I-15. The site consists of a frame house, frame milk house/whelping house, frame unattached double garage, frame dairy barn, and frame outhouse. The site is recommended as eligible for listing under Criterion C for its representation of domestic western rural architecture. **Figure 6-3** shows the location of this resource relative to the proposed project improvements.

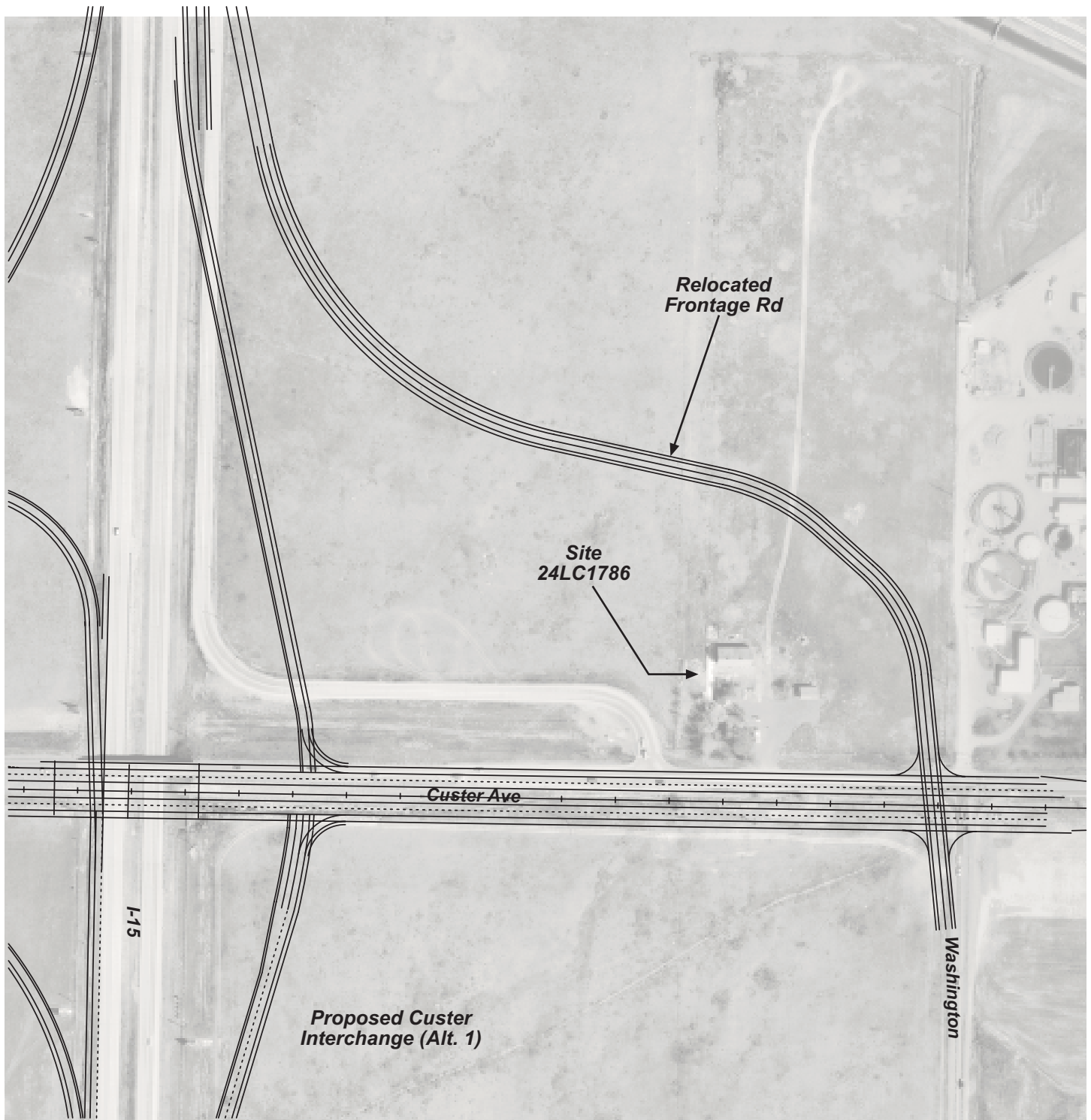
Description of Impacts

Under the No-Action Alternative, there would be no improvements made to I-15, Custer Avenue or the east side Frontage Road. Therefore, there would be no direct indirect or constructive impacts to or uses of this historic property.

With the Preferred Alternative, a new interchange would be constructed at Custer Avenue and Custer Avenue would be widened to four lanes from N. Montana Avenue to Washington Street. The east side Frontage Road would be relocated further east to tie in directly to the Custer Avenue/N. Washington Street intersection. Relocation of the Frontage Road and reconstruction of the Washington Street intersection would move the roadways further away from the Washburn Farmstead than they are at the present time. This construction would not require acquisition of property from the historic site and would not change its importance as a representative example of rural architecture.

Realignment of the east side Frontage Road and Custer Avenue/N. Washington Street intersection and replacement of the overpass with an interchange would not result in proximity impacts that will impair the historic value or continued use of this property. Therefore, no constructive use of the Washburn Farmstead/Edie Barbeau Home is anticipated.

Under Alternative 2, no new interchange would be constructed at Custer Avenue. Therefore, no changes would be made to the Frontage Road or the Custer Avenue/Washington Street intersection.



The SHPO has concurred that changes to the intersections and roadways in the vicinity of the Washburn Farmstead result in an effect on this historic property; however, the effect is not considered to be adverse. The SHPO's concurrence with the No Adverse Effect determination is included in Volume 2, Appendix B.

6.3.5 Silver Creek School/Little Red School House

Description of Resource. **Site 24LC787.** The Silver Creek School building (a.k.a. Little Red School House) is located in the southeast quadrant of I-15 at Sierra Road. No improvements are proposed in this area with the Preferred Alternative, Alternative 2 or the No-Action Alternative. There would be no direct, indirect or constructive use impacts to the Silver Creek School with any alternative. The SHPO concurred with a No Effect determination for Site 24LC787 on March 8, 2002. Documentation of this concurrence is also included in Volume 2, Appendix B.

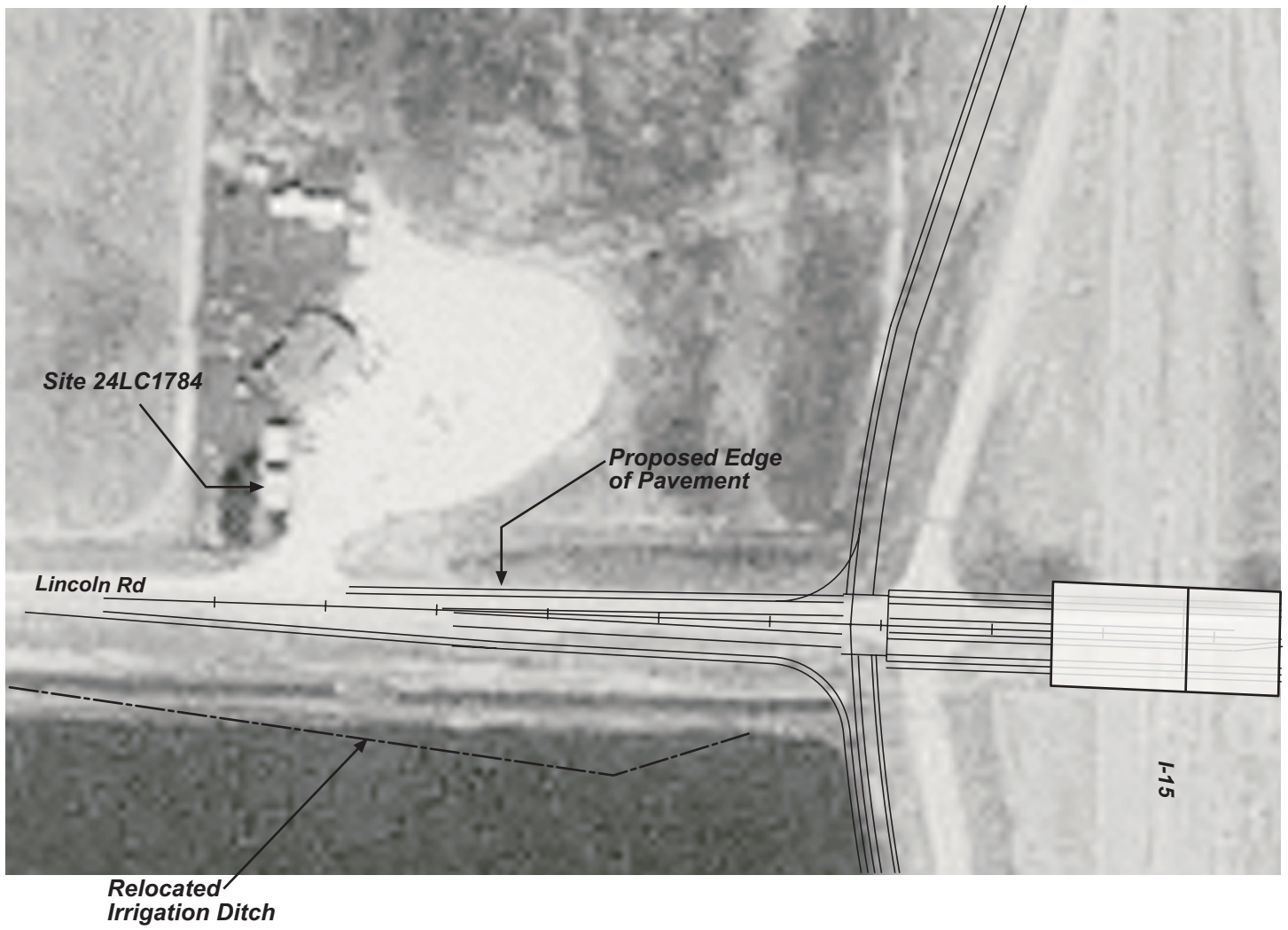
6.3.6 Deal House

Description of Resource. **Site 24LC1784.** The Deal House, located northwest of the Lincoln Road and I-15 interchange, consists of a single log house that dates to 1931. The site is representative of depression era vernacular, log house construction and was recommended as eligible to the NRHP under Criterion C as a good example of that architectural style.

Discussion of Impacts

Under the No-Action Alternative, the existing interchange at Lincoln Road would be reconstructed. No plans have been developed for this proposed project which is identified in the Statewide Transportation Improvement Plan. For the purposes of this analysis, the No-Action improvement is presumed to be the same as the reconstruction described below.

With both the Preferred Alternative and Alternative 2, the Lincoln Road interchange would be reconstructed. The proposed interchange reconstruction includes widening the Lincoln Road bridge over I-15 to three lanes, with standard shoulders and pedestrian and bicycle facilities on both sides of the new bridge. The interchange bridge approaches would transition from the current two lanes east and west of I-15 to match the width of the new three-lane bridge. It is at this transition area west of I-15 that the Deal House and an adjacent restaurant are accessed off Lincoln Road to the north. The existing access to the property would not be relocated. Some right-of-way acquisition may be required from the unpaved and un-delineated entranceway to the restaurant parking lot to accommodate the wider roadway typical section. No impacts to the Deal House would occur, as the structure is located approximately 25 meters (75 feet) from Lincoln Road (see **Figure 6-4**). The SHPO concurred with a No Adverse Effect determination on November 25, 2002.



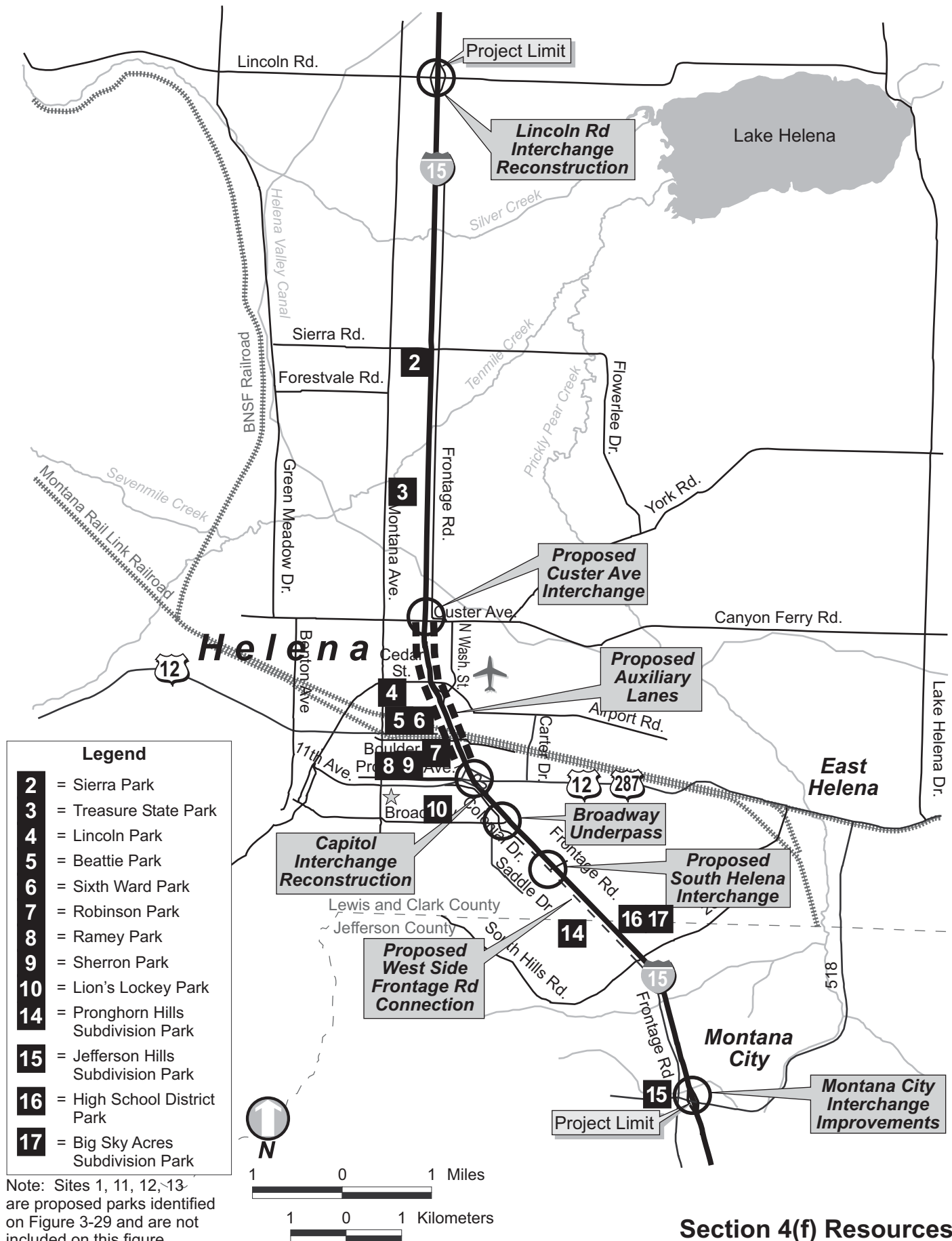
The improvements at Lincoln Road would not change the current use of the property or alter the qualities and characteristics that make it eligible for the National Register. With either the Preferred Alternative or Alternative 2, traffic volumes on Lincoln Road adjacent to the Deal House are less than they would be under the No-Action Alternative. Thus potential impacts associated with traffic-generated noise and air pollutants should also be less than the No-Action Alternative. While the edge of pavement along Lincoln Road could shift closer to the house by approximately 3.6 meters (12 feet) this shift would occur within highway right-of-way and would not substantially impair the property or its visual setting. Thus, no direct or constructive use of the Deal House historic property would result from either of the two build alternatives.

6.4 Section 4(f) Resources: Parks and Recreational Resources

There are 14 existing and four proposed parks within the project's area of potential effect. Existing parks are shown on **Figure 6-5**. None of these park facilities, including the proposed parks, are located in areas that would incur direct or indirect adverse impacts with either the Preferred Alternative or Alternative 2. Similarly, there are no public golf courses or other recreational facilities located in areas to be impacted by the project. Existing pedestrian and bicycle facilities consist of on-street bike lanes, separated bikeways and off-street trails. As shown in **Figure 6-6**, none of these facilities are located in areas that would be negatively impacted by the Preferred Alternative or Alternative 2.

Improvements to be provided by either the Preferred Alternative or Alternative 2 would result in direct and indirect beneficial impacts to parks and recreational facilities. Creation of new and safe facilities for pedestrians and bicyclists at each interchange location and improved traffic operations on I-15 and the major east-west roadways connecting with I-15 would enhance the ability of the public to access and enjoy these recreational amenities.

Sierra Park, located immediately south of Sierra Road and west of I-15, is close to the proposed southbound I-15 exit ramp for the new Forestvale Road interchange proposed under Alternative 2. This proposed improvement would move new ramp traffic closer to the park than the existing mainline I-15 traffic but would not require acquisition of any land from the park. All active and passive recreational uses of the park would continue without interruption. Minor differences in noise levels and the visual setting along the park's eastern side can be anticipated but these changes are not expected to substantially change the public's use or enjoyment of the park. Therefore, no constructive use of this park is expected with Alternative 2.



Section 4(f) Resources - Existing Parks

Figure 6-5

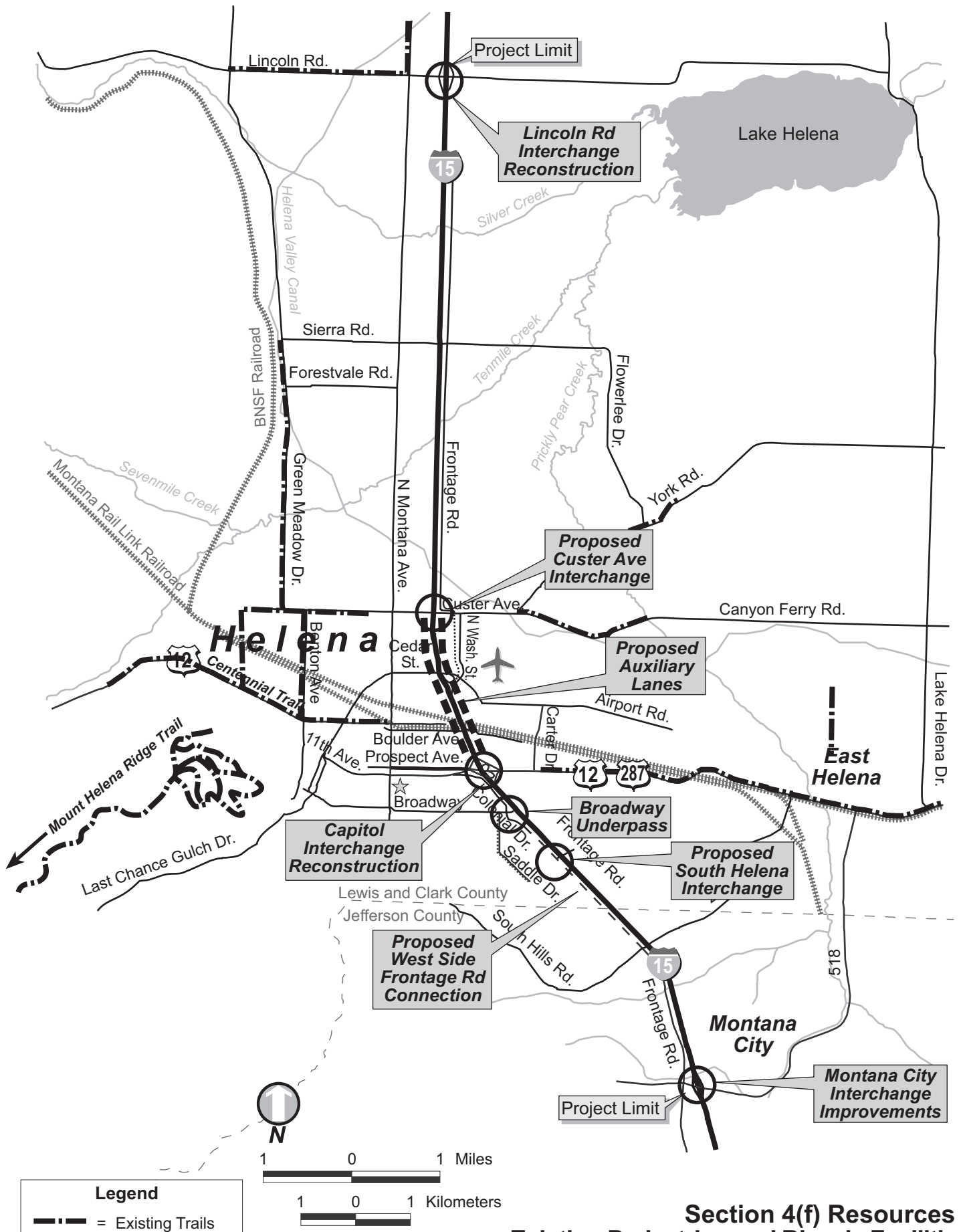


Figure 6-6

Under the Preferred Alternative, no improvements to the interstate system would be made north of the new Custer interchange. As a result, there would be no changes made in the vicinity of Sierra Park and no direct, indirect or constructive uses impacts would occur.

Since no property takings or constructive use has been identified to publicly owned parks and recreational areas, no further analysis of these resources is required under Section 4(f).

6.5 Avoidance Alternatives

Only one of the historic properties discussed in Section 6.3 would be impacted by the proposed project. This property is the Northern Pacific Railroad, Site 24LC1139. No properties discussed under Section 6.4 would be impacted by the Preferred Alternative or Alternative 2. Properties protected under Section 4(f) must not be taken unless there is no prudent and feasible alternative to the use of the property. In addition, the project must include all possible planning to minimize harm to the Section 4(f) resource. This section discusses possible alternatives that would avoid impacts to the historic railroad and measures taken to minimize harm.

6.5.1 Alternatives to Avoid Impacts

Under the No-Action Alternative, auxiliary lanes would not be added to the interstate highway to address safety and mobility concerns. As a result, the existing bridges would not be widened and no changes would need to be made to the existing piers. Therefore, no direct, indirect or constructive use impacts would occur to the historic Northern Pacific Railroad property.

With the either the Preferred Alternative or Alternative 2, the existing I-15 bridges over the Northern Pacific Railroad must be widened to safely accommodate increases in traffic anticipated in Year 2025 and to achieve an acceptable level of service on the interstate. The historic railroad is a linear resource running east to west where it passes beneath the interstate highway. (See **Figure 6-1** and **Figure 6-2.**) Thus, shifting the alignment of the interstate east or west would not avoid the impacts. There are no parallel routes available for directing traffic off of the interstate in a manner that would eliminate the need for the addition of auxiliary lanes on the existing bridges. The existing bridges are functionally obsolete and are not strong enough to allow attaching the auxiliary lanes without the use of additional support piers. Constructing a new clear span bridge over the railroad without the use of support piers placed on railroad property would require suspension or cable stay technology since the distance required for such a bridge would exceed 152 meters (500 feet). It is estimated that this type of long-span bridge would cost about five times as much as a standard bridge with pier locations in the railroad right-of-way.

Thus, there are no prudent and feasible alternatives to the use of railroad property for the placement of bridge piers to support the new interstate bridges.

6.5.2 Measures to Minimize Harm

Section 4(f) requires that federal transportation projects that must take or use property from a protected resource include all possible planning to minimize harm to those properties. To accomplish this, coordination has taken place with the Montana Rail Link, operators of the historic Northern Pacific Railroad, and with the BNSF Railroad which owns the property (see Section 6.6 below). Coordination will continue prior to and during construction to ensure any disruption to rail operations would be minimized. The placement of bridge piers will also be coordinated and designed to minimize property impacts. If possible, land currently used for bridge piers will be used for this same purpose for the new bridges. If new pier placements are required, old piers would be removed and disposed of away from the historic property.

6.6 Coordination

This project and all of the alternatives under consideration have been coordinated with the Montana Rail Link, the BNSF Railroad, the State Historic Preservation Officer, the city of Helena, Lewis & Clark County, Jefferson County and the general public. Specific coordination related to the Northern Pacific Railroad historic site includes the following:

- ▶ Letter requesting Determination of Eligibility and Effects sent to the State Historic Preservation Officer on February 14, 2002, with concurrence received on March 8, 2002.
- ▶ Second letter requesting Determination of Eligibility and Effects sent to the SHPO on November 12, 2002, with concurrence received on November 25, 2002.
- ▶ Letter to the Montana Rail Link dated November 18, 2002, explaining the purpose of the project, the need to replace the existing I-15 bridges over the railroad property and the potential project impacts to rail property.
- ▶ Project coordination meeting with Montana Rail Link personnel on December 4, 2002.
- ▶ Letter to BNSF Railroad dated December 19, 2002, explaining the purpose of the project, the need to replace the existing I-15 bridges over the railroad property and the potential project impacts to rail property.
- ▶ Letter from the Montana Rail Link dated May 22, 2003, expressing their desire to continue coordination efforts on the project and offering their opinion that the I-15 project would have no effect on the historic integrity of the railroad.

Copies of the Section 4(f) coordination letters are included in Volume 2, Appendix B.

6.7 Section 4(f) Determination

Based upon the above considerations, it is determined that there are no prudent and feasible alternatives to the use of land from the historic Northern Pacific Railroad property and that the proposed action includes all possible planning to minimize harm to this Section 4(f) property resulting from such use.

6.8 What is Section 6(f)

Section 6(f) applies to public recreational areas developed with partial or complete funding provided through the Land and Water Conservation Fund Program, Assistance to States and Urban Parks (L&WCF). The L&WCF program was established by the L&WCF Act of 1965 (Public Law 88-578) which is now codified at 16 U.S.C. 460. Under this act, the Secretary of Interior provides funds to the states to plan, acquire or develop outdoor recreation facilities. Section 6(f) of the Act provides in part that:

“No property acquired or developed with assistance under this section shall, without the approval of the Secretary [of Interior], be converted to other than public outdoor recreation uses. The Secretary shall approve such conversion only if he finds it to be in accord with the then existing comprehensive statewide outdoor recreation plan and only upon such conditions as he deems necessary to assure the substitution of other recreation properties of at least equal fair market value and of reasonably equivalent usefulness and location.”

6.8.1 Section 6(f) Resources

Only one recreational property has been identified in the study area that was developed with L&WCF assistance (see coordination letter in Volume 2, Appendix B). This property is Sierra Park, located just south of Rossiter Elementary School in the southwest quadrant of the Sierra Road underpass and I-15.

6.8.2 Potential Impacts to 6(f) Properties

Under the No-Action Alternative, there would be no improvements to corridor transportation facilities and, therefore, no potential impacts to Sierra Park. Under the Preferred Alternative, no improvements would be made between the Custer Avenue interchange ramps and the Lincoln Road interchange ramps. Improvements at these two interchanges will occur more than 3.3 kilometers (2 miles) from Sierra Park and no conversion of park property will be required. With Alternative 2, construction of the I-15 southbound off-ramp to the proposed Forestvale Road interchange would bring traffic closer to the park (see **Figure 6-5**) but would not require conversion of

any park property for other purposes. Therefore, no further coordination is required under Section 6(f).

CHAPTER 7.0: COMMENTS AND COORDINATION

7.1 Introduction

This chapter describes the integrated program of agency and public coordination and involvement activities conducted during the Environmental Impact Statement (EIS) process. The agency coordination and public involvement activities were specifically planned to be open, inclusive, and ongoing throughout the EIS process.

The program included numerous outreach activities to ensure a high level of public awareness of the progress of the project and to provide a wide range of opportunities for public review and comment on key project findings and conclusions. These activities included agency and public scoping meetings, public workshops, active involvement of a project Advisory Committee, agency briefings, presentations to local groups and organizations, newsletters, a project Web site, a telephone information hotline, an extensive media information program, a public opinion survey, and public review of the DEIS and FEIS. Special effort was made to reach low-income and minority communities located within the study area, including those who use the I-15 Corridor.

7.2 Agency Coordination

Agency coordination was conducted to ensure a timely flow of project information between the federal, state, and local agencies involved in the project, and to ensure necessary interaction with and awareness of public issues and concerns identified during public involvement activities. Coordination activities included project scoping, regular meetings and briefings with agency staff, creation of an Interdisciplinary Team (ID Team), and agency review of the DEIS, FEIS, and ROD.

Consultation with Native American groups was also conducted to solicit comments or concerns focused on tribal interest (see Volume 2, Appendix B for coordination letters).

7.2.1 Cooperating Agencies

Scoping letters were sent out to request agency coordination on the EIS in accordance with FHWA regulations 23CFR 771.111(d). Only the U.S. Fish and Wildlife Service (see Volume 2, Appendix B) accepted the invitation to become a cooperating agency.

7.2.2 Coordination with Local, State, and Federal Agencies

Several steps were taken for agency scoping to identify important issues to be addressed in the EIS. These included scoping letters sent to various agencies,

coordination with federal, state and local agencies, and an Interdisciplinary Team being established. The following provides a more detailed discussion of the various elements in the agency scoping process.

Local, state and federal agencies were contacted by phone, fax and email at various points in the process. The purpose of these contacts was to provide technical information regarding issues such as wetlands, wildlife, community resources and city and county long-range plans. Coordination with resource agencies was conducted early on to assist in data collection and provide general guidance.

Table 7-1 lists meetings or other forms of coordination that have taken place with governmental entities.

Table 7-1
Agency Coordination

| Date | Agency or Individual |
|-------------|---|
| 7/10/2001 | MDT/FHWA Kick-off Meeting |
| 7/10/2001 | Transportation Coordinating Committee (TCC) Briefing #1 |
| 7/11/2001 | FHWA Coordination |
| 7/11/2001 | MDT/FHWA Project Coordination |
| 8/20/2001 | MDT EIS Coordination |
| 8/21/2001 | Helena Mayor Ken Morrison—project overview briefing |
| 8/23/2001 | MDT/FHWA Project Coordination |
| 9/10/2001 | Lewis & Clark County Sheriff's Department—project coordination |
| 9/10/2001 | Helena Police Department—project coordination |
| 9/10/2001 | Helena Fire Department—project coordination |
| 9/10/2001 | Lewis & Clark County—bike and pedestrian facilities |
| 9/11/2001 | Jefferson County Officials—project coordination |
| 9/11/2001 | Transportation Coordinating Committee Briefing #2 |
| 9/12/2001 | Interdisciplinary Team Meeting #1 |
| 9/14/2001 | MDT/FHWA Project Coordination |
| 10/22/2001 | MDT/FHWA Project Coordination |
| 10/23/2001 | City of Helena and Lewis & Clark County Staff Briefing—project overview |
| 10/24/2001 | Lewis & Clark County Administrator—project coordination |
| 10/24/2001 | Helena City Manager—project coordination |
| 10/24/2001 | MDT/FHWA Project Coordination |
| 10/24/2001 | Montana Highway Patrol—project coordination |
| 11/15/2001 | MDT/FHWA Project Coordination |
| 11/15/2001 | Jefferson County Planning—project coordination |
| 12/19/2001 | MDT/FHWA Project Coordination |
| 1/29/2002 | City and County Water Department—environmental data collection |
| 1/29/2002 | Lewis & Clark County Planning—environmental data collection |
| 1/29/2002 | MDT/FHWA Project Coordination |

continued

Table 7-1 (continued)
Agency Coordination

| Date | Agency or Individual |
|-------------|--|
| 1/29/2002 | City of Helena and Lewis & Clark County—project coordination, alternatives evaluation criteria |
| 1/30/2002 | Jefferson County Planning— project coordination |
| 1/30/2002 | City of Helena Community Outreach—environmental justice coordination |
| 1/30/2002 | Eagle Ambulance Service—emergency services coordination |
| 1/30/2002 | West Valley Fire District Emergency Services—emergency services coordination |
| 1/30/2002 | City of Helena—land use coordination meeting |
| 2/7/2002 | St. Peter's Ambulance Services—emergency services coordination |
| 2/27/2002 | St. Peter's Ambulance Services—emergency services coordination |
| 2/28/2002 | Lewis & Clark County Planning—GIS coordination |
| 2/28/2002 | MDT/FHWA Project Coordination |
| 3/1/2002 | MDT/FHWA Project Coordination |
| 4/17/2002 | MDT/FHWA Project Coordination |
| 4/18/2002 | Montana Department of Public Health and Human Services—project coordination/ outreach |
| 4/18/2002 | MDT/FHWA Project Coordination |
| 5/13/2002 | Helena Mayor Jim Smith, City Commissioner Steve Netschert and City Manager Tim Burton—project overview meeting |
| 5/14/2002 | Transportation Coordinating Committee (TCC) Briefing # 3 |
| 5/14/2002 | MDT/FHWA Project Coordination |
| 6/5/2002 | MDT/FHWA Project Coordination |
| 6/5/2002 | MDT/FHWA—environmental procedures coordination |
| 6/5/2002 | MDT/FHWA Project Coordination |
| 6/6/2002 | MDT/FHWA—alternatives and interchanges configuration |
| 6/7/2002 | Interdisciplinary Team Meeting #2 |
| 6/7/2002 | City of Helena Traffic Personnel—project coordination |
| 7/23/2002 | MDT/FHWA Project Coordination |
| 7/23/2002 | Lewis & Clark County Planning Department—project coordination |
| 7/24/2002 | City of Helena, Lewis & Clark County, private developers—project coordination |
| 10/11/2002 | MDT/FHWA Project Coordination |
| 12/4/2002 | MDT/FHWA Project Coordination |
| 1/14/2003 | MDT/FHWA Project Coordination |
| 1/14/2003 | Transportation Coordinating Committee Briefing #4 |
| 3/11/2003 | MDT/FHWA—review DEIS comments |
| 4/15/2003 | Preferred Alternative identified |
| 5/7/2003 | Montana Transportation Commission—discussed Preferred Alternative identification |

7.2.3 Interdisciplinary Team

An Interdisciplinary (ID) Team was established to provide coordinated project scoping input and to gain consensus on technical issues to be addressed in the EIS. The ID Team includes resource and permitting agencies (U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, U.S. Environmental Protection Agency, Montana Department of Environmental Quality, and Montana Fish, Wildlife and Parks), representatives of local government entities (Jefferson County, Lewis & Clark County, and the city of Helena), public sector agencies from the study area, Montana Department of Transportation (MDT) staff and the Federal Highway Administration (FHWA). This committee met twice to provide feedback on technical and environmental issues and provided review comments on a preliminary draft of the DEIS. ID Team members possessed technical expertise in the areas of engineering, environment, planning, utilities, transportation, and transit. Together they provided a wealth of knowledge to assist in preparing the EIS.

Meetings were held at two key points in the EIS process:

- ▶ *ID Team Meeting #1 (September 12, 2001)*: This meeting was intended to define a scope of resources to be addressed in the DEIS. An overview of the project was presented to the team and input was gathered. Also discussed were the resources to be addressed in the cumulative impacts section of the document.
- ▶ *ID Team Meeting #2 (June 7, 2002)*: This meeting was intended to update the team on the progress of the project, review initial alternatives and review public comments received to date. Also discussed were the purpose and need statement, the package of conceptual alternatives and upcoming public involvement efforts.

7.3 Public Scoping Process

Public involvement was conducted to provide a high level of public awareness of the project and project decision-making, and to ensure that interested residents, businesses, interest groups, and other potentially affected parties had opportunities to provide input into the development of the project and be directly involved in major project activities.

7.3.1 Notice of Intent

A Notice of Intent (NOI) to prepare the I-15 Corridor EIS was published in the Federal Register on July 15, 2001. A copy of the NOI is included in Volume 2, Appendix B.

7.3.2 Land Use Advisory Group

Land Use Advisory Group workshops were conducted on August 20 and 22, 2001, in Helena, to provide local assistance in developing accurate existing and future travel demand forecasts for the study area. The workshops were conducted with a group of stakeholders (see **Table 7-2**) representing diverse local knowledge and interests to validate land use assumptions made for the EIS analysis and to provide informed estimates for the location of future land use growth (population and employment) in the Helena Valley. The information from the workshops was used as input to the transportation demand model (the model) developed to forecast future traffic volumes in the study area based on areas of future development.

Table 7-2
Land Use Advisory Group Members

| Name | Group Represented |
|-----------------|--|
| Kathy Macefield | City of Helena Planning |
| Derek Brown | Helena Business Industry Association |
| Anita Varone | Lewis & Clark County Commission |
| Tom Lythgoe | Jefferson County Commission |
| Paul Cartwright | Growing Friends |
| Nancy Pitblado | Plan Helena |
| Jerry De Backer | Prickly Pear Land Trust |
| Cathy Burwell | Helena Area Chamber of Commerce |
| Marga Lincoln | Alternative Energy Resource Organization |

Using Census Bureau county-level population forecasts and interpolating for the 2025 forecast year, a future greater Helena area population of 81,250 persons was calculated. This growth of 24,250 persons over the 2000 census figure was used to estimate an increase of just over 10,000 new households in the EIS 25-year planning period. Based on current rates of jobs per population, 18,170 new jobs were calculated to be added by 2025.

The Advisory Group prepared maps showing their forecast of where future households and places of employment would locate based on their familiarity with the area and their own assumptions of where growth would most likely occur for three scenarios. These scenarios addressed how growth patterns would be different with the No-Action, a northern interchange, or a southern interchange (see Section 3.2.2.3 for more detailed information on this process). These assumptions for land use growth were then incorporated into the model, which was applied to the different transportation alternatives developed for the I-15 Corridor.

The ratio of allocation of the projected population increase to Lewis & Clark County and Jefferson County for scenario 1 (baseline) was 3:1; for scenario 2 (new northern interchange) was 4:1; for scenario 3 (new southern interchange) was 2:1, indicating the potential shifts in land use that could be expected to result from future construction of new interchanges along I-15.

7.3.3 Advisory Committee

A 19-member Advisory Committee (AC) was created for this project to provide input and advice throughout the development of the EIS. The AC was involved in refining the project purpose and need statement, developing goals and objectives to be used in identifying potential transportation improvements and in selecting the most important improvements that became the DEIS build alternatives. At its last meeting, the AC unanimously recommended to MDT that Alternative 1 be evaluated as the Preferred Alternative in the FEIS, recognizing emergency service issues in the north valley and retaining the Forestvale interchange right-of-way. This recommendation was considered by MDT in its identification of the Preferred Alternative.

The committee was selected to represent a broad cross section of groups and individuals with a high level of knowledge of and interest in identifying existing transportation issues and potential transportation solutions within the study area. It was important to have diverse community interests represented while also keeping the committee small enough to discuss issues effectively. It was also important that committee members be able to obtain input from the community at-large and be willing to communicate issues and considerations with their constituencies.

The process of selecting the AC began with a list of interests along the I-15 Corridor. Groups and individuals representing these interests were identified through local interviews with community leaders. Potential committee members were then individually interviewed by a professional meeting facilitator to determine their interest in participating on the committee through the duration of the project. The 19 members of the AC are listed in **Table 7-3**.

Table 7-3
Advisory Committee Members

| Name | Group Represented |
|---------------|--|
| Derek Brown | Building industry |
| Cathy Burwell | Helena Area Chamber of Commerce |
| Joe Calnan | North Jefferson County businesses and emergency services |
| John Carter | Helena School District |
| Jim Cottrill | Airport Commission and Hometown Helena Pride |

continued

Table 7-3 (continued)
Advisory Committee Members

| Name | Group Represented |
|---------------|--|
| Joel Gerhart | Recreation and bicycle interests |
| Bob Habeck | Helena Citizens Council and Capitol-area neighborhoods |
| Victor Kelly | West Helena emergency services |
| Wayne Krieger | East Helena |
| Ray Kuntz | Trucking industry |
| Marga Lincoln | Alternative Energy Resources Organization (AERO) |
| Ellen Livers | St. Peter's Hospital |
| Tom Lythgoe | Jefferson County Commission |
| Pete McHugh | North Valley agricultural and irrigation interests |
| Bob Marks | Jefferson Local Development Corporation |
| Ken Morrison | City of Helena |
| Mike Murray | Lewis & Clark County Commission |
| Paul Reichert | Downtown Helena Business Improvement District |
| Dick Thweatt | Plan Helena |

The following summary of Advisory Committee meetings held indicates the breadth and depth of AC involvement throughout the EIS process.

- ▶ *Advisory Committee Meeting #1 (September 12, 2001, West Coast Colonial Hotel, Helena):* The AC was introduced, and its purpose and internal working agreement defined. Project and committee meeting schedules were coordinated. During a visioning session, the AC identified the regional qualities they wanted preserved, and identified transportation actions they felt would achieve the preservation of those qualities (see Section 2.3.1).
- ▶ *Advisory Committee Meeting #2 (October 23, 2001, Montana City School, Montana City):* The AC discussed the intent and process of defining the project purpose and need, reviewed the results of the Land Use Advisory Group workshops (see Section 7.3.2 and Section 3.2.2.3), and began to identify project goals related to preserving the most important qualities of the region.
- ▶ *Advisory Committee Meeting #3 (November 15, 2001, Helena Chamber of Commerce, Helena):* The AC finalized the definition of project goals (see Section 2.3.2), and began to define evaluation criteria to be used in the screening of future transportation improvement options for the project. The AC discussed potential project funding sources and funding requirements with MDT staff.
- ▶ *Advisory Committee Meeting #4 (January 30, 2002, Helena Chamber of Commerce, Helena):* The AC worked on establishing specific evaluation criteria and the screening process to be used in association with each of the eight project goals.

An initial list of 27 possible transportation improvements was developed to address travel issues defined in the I-15 study area. The AC discussed the results of the public opinion survey and each member received a copy of the final survey report.

- ▶ *Advisory Committee Meeting #5 (February 28, 2002, Helena Chamber of Commerce, Helena):* The AC reviewed project traffic study background information, and reduced the list of possible transportation improvements to 13 improvement options, identified as either major “stand alone” projects or supporting elements.
- ▶ *Advisory Committee Meeting #6 (April 17, 2002, First Presbyterian Church, Helena):* Utilizing the evaluation criteria developed in previous meetings, the Advisory Committee reduced the 13 improvement options to four conceptual transportation alternatives: two northern alternatives (a new Custer interchange and a new Forestvale interchange), a central alternative (reconstruction of the Capitol interchange), and a southern alternative (a new South Helena interchange). In addition, 12 supporting projects were identified that could be added to the conceptual alternatives to enhance their effectiveness. The AC discussed the status of planning for the Capitol interchange with MDT staff.
- ▶ *Advisory Committee Meeting #7 (June 6, 2002, First Presbyterian Church, Helena):* The AC reviewed the comments received at the third public workshop and the initial results of a newspaper questionnaire that had recently appeared in local newspapers (see 7.4.5.1). The committee began to discuss prioritizing the conceptual alternatives singly and in combination to best accommodate the defined project goals and meet project purpose and need. They also began to identify the preferred supporting elements.
- ▶ *Advisory Committee Meeting #8 (July 24, 2002, First Presbyterian Church, Helena):* The purpose of the meeting was to provide the AC with an overview of the entire EIS process and to discuss as a group the I-15 Corridor alternatives and supporting elements. AC members each presented their opinions on the most needed and reasonable improvement options for the corridor.
- ▶ *Advisory Committee Meeting #9 (December 4, 2002, Helena Chamber of Commerce, Helena):* The purpose of this meeting was to discuss with the AC the final screening process followed to arrive at the two build alternatives, present the concept design configurations developed for the Capitol and Custer interchanges, and review the status of the DEIS preparation and project schedule.
- ▶ *Advisory Committee Meeting #10 (March 12, 2003, First Presbyterian Church, Helena):* The purpose of the meeting was to recommend a Preferred Alternative for evaluation in the FEIS. The AC unanimously recommended Alternative 1 to MDT, recognizing emergency service issues in the north valley and recommending retaining the Forestvale interchange right-of-way.

7.3.4 Public Opinion Survey

A Public Opinion Survey was conducted during October and November 2001 in the Helena region to provide additional information on transportation issues in the I-15 Corridor between the Montana City and Lincoln Road interchanges. The survey also asked citizens to identify transportation improvements they would like to see implemented to address those issues. The information was tabulated in December 2001 and presented at the second public workshop in January 2002. The Executive Summary of the survey report was posted on the project Web site and the entire survey report was available for review in local libraries.

Utilizing standard random sampling techniques, 4,000 households were selected from the zip codes for Clancy, East Helena, Helena, Townsend, and portions of Jefferson and Lewis & Clark Counties. Of the households actually receiving the survey (3,442 households), 41% completed the survey (1,411 households).

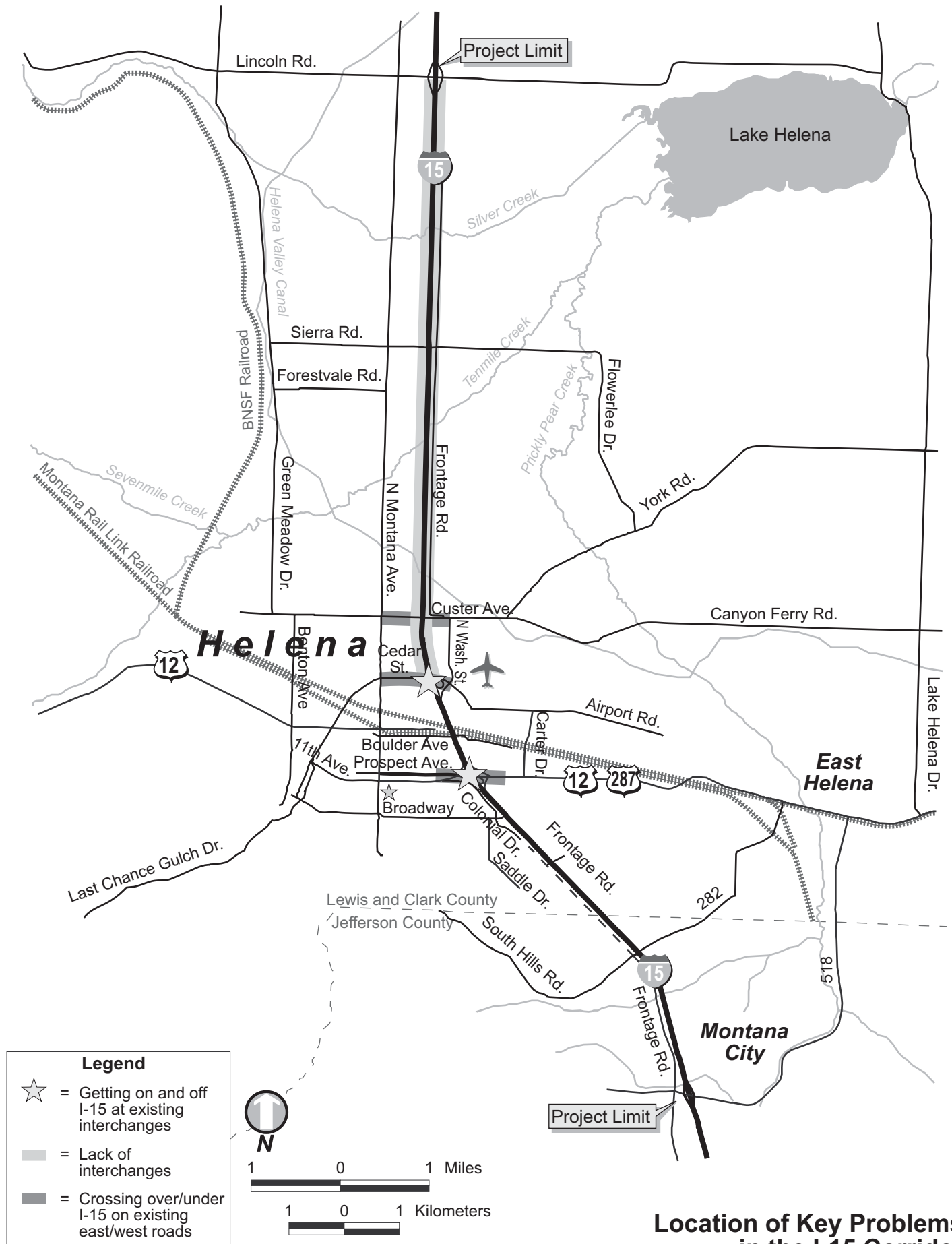
The majority of responses indicated that the key problems in the I-15 study area were (in order of preference):

- ▶ Getting on and off I-15 at existing interchanges, particularly during peak hour travel at the Capitol interchange (congestion and safety concerns) and the Cedar Street interchange (congestion).
- ▶ Lack of interchanges, particularly between the Cedar Street and Lincoln Road interchanges for access to business and shopping, and access to work.
- ▶ Crossing under or over I-15 on existing east/west roads, particularly during peak hour travel on Custer Avenue, Prospect Avenue (Capitol interchange), and Cedar Street, with traffic congestion being the major issue.

See **Figure 7-1** for a graphic representation of these locations.

Many respondents indicated they felt their quality of life would be better, particularly if "something" was done in the area between the Cedar Street interchange and the Lincoln Road interchange. The corridor transportation improvements that a majority of the responses indicated are (in order of preference):

- ▶ Including a new interchange north of Cedar Street
- ▶ Including improvements for pedestrians and bicyclists
- ▶ Including a new overpass/underpass north of Cedar Street
- ▶ Including improvements for bus service
- ▶ Including a new interchange south of the Capitol interchange
- ▶ Including a new overpass/underpass south of the Capitol interchange



**Location of Key Problems
in the I-15 Corridor**

Figure 7-1

7.3.5 Public Workshops

Three I-15 Corridor public workshops were conducted during the project. The purposes of the workshops were to provide information to the general public and to obtain input to three key project elements: project scoping/ identification of corridor issues, identification of possible I-15 transportation improvements, and definition of the conceptual alternatives. All of the workshops were conducted in an open-house format with the first and second workshops also including formal presentations and question and answer sessions.

- ▶ *Public Workshop #1 (September 11, 2001, 5:00 p.m. to 8:00 p.m., West Coast Colonial Hotel, Helena):* This public scoping meeting was held to introduce the I-15 Corridor EIS project and to provide the general public with an opportunity to identify important transportation issues to be addressed in the study area. Sixty-three people attended the workshop. A formal presentation was made describing the EIS process, the project purpose and need, and the creation of three separate groups (the Advisory Committee, the Interdisciplinary Team, and the Land Use Advisory Group) to assist in the corridor study. A 40-minute question-and-answer period followed the presentation.

Primarily, issues identified focused on reducing congestion at and improving the functioning of existing interchanges, particularly the Capitol interchange, and the need for improved access to downtown and other developing areas from the interstate. Also mentioned were minimizing the I-15 barrier effect to east/west travel within the community; reducing response times for ambulance and emergency services, connecting existing frontage roads, particularly on the west side, minimizing traffic impacts in neighborhoods, and the need for alternatives to driving, including bicycle, pedestrian, and transit facilities.

Because of the tragedy that occurred on September 11, the opportunity for the public to communicate their issues was extended. Citizens were encouraged to use the project Web site, the telephone information hotline, or to write to the MDT project manager to state their issues and concerns. From the workshops and the extended review period, approximately 120 comments were received from the public. Copies of the meeting agenda and handouts are in Volume 2, Appendix C.

- ▶ *Public Workshop #2 (January 29, 2002, 4:30 p.m. to 7:30 p.m., West Coast Colonial Hotel, Helena):* The second public workshop was held to present the results of various existing conditions surveys and analyses, future traffic and development projections, and the results of the public opinion survey in order for attendees to identify possible transportation improvements they felt would address issues in the study area. The formal presentation made on September 11, 2001, was repeated at this workshop to provide complete background information to anyone who was not able to attend the first public workshop.

One hundred and twenty-six people attended the workshop. Over 150 comments were received during the workshop. The most common suggestions for resolving travel issues in the study area included a Broadway underpass, improving the Capitol interchange, providing a new interchange at Custer Avenue, the desire for other northern area interchanges, and suggestions for a southern interchange. Copies of the meeting agenda and handouts are in Volume 2, Appendix C.

- ▶ *Public Workshop #3 (June 5, 2002, 4:30 p.m. to 7:30 p.m., West Coast Colonial Hotel, Helena):* The third public workshop was held to provide information on the conceptual transportation improvement options and supporting elements developed for the corridor and to receive comments on them from the public. No formal presentation was made at this workshop.

Eighty-five people attended the workshop and 96 comments were received. There was strong support for both of the northern alternatives, Custer Avenue and Forestvale, because they would serve existing and anticipated future development in the northern area. Several options for resolving concerns about the proximity of a Custer interchange to the existing Cedar Street interchange to the south were suggested. The Forestvale interchange was thought to provide time and cost savings since the interchange had been previously designed and the right-of-way purchased. Strong support was also expressed for the Custer Avenue interchange options to address existing and pending development.

There was universal agreement that existing congestion and safety issues at the Capitol interchange must be addressed. Comments were received that interchange improvements must incorporate adjacent street improvements and connections, including Colonial Drive, the west side Frontage Road, and Fee Street to improve local accessibility, reduce congestion, and minimize traffic in nearby neighborhoods. Several interchange and adjacent street improvement options were suggested.

The Saddle Drive (South Helena) interchange option received the greatest number of comments at the workshop. There was preference that the interchange connect to the west side Frontage Road rather than directly to the adjacent residential streets to minimize local traffic impacts. Largely as a result of this public input the concept of a new southern interchange was changed to eliminate the direct connection to Saddle Drive. To avoid confusion, the name of this new interchange configuration was changed to South Helena.

For the supporting elements, there was most interest in and support for connecting the west side I-15 Frontage Road to Colonial Drive, providing improved pedestrian and bicycle facilities, designating and upgrading an eastside truck

route, and paving and improvement of Boulder Avenue under I-15 with connections to US 12. Copies of the meeting agenda and handouts are in Volume 2, Appendix C.



Discussion of land use and growth issues during the second public workshop in January 2002.



Attendees talking with I-15 Project Team members about interchange improvement options during the third public workshop in June 2002.

7.4 Public Information Program

7.4.1 Local Group and Organization Meetings

Forty-one meetings were held with various interest groups, local organizations, elected officials, and individuals to explain the EIS process, provide ongoing awareness of the project, respond to specific questions asked, and ensure that issues and concerns were clearly defined and understood. **Table 7-5** (Section 7.6) lists the meetings that have been held with local organizations and groups.

7.4.2 Newsletters

Seven project newsletters were published throughout the study informing and updating the public on the progress of the EIS:

- ▶ *Newsletter #1 (August 2001)*: Announced the first public workshop, solicited the public for comments about transportation issues in the study area, and provided information about the project including description, schedule, and opportunities for involvement.
- ▶ *Newsletter #2 (January 2002)*: Announced the second public workshop, provided a summary of the comments received at and following the first public workshop,

identified potential transportation improvement options, and outlined the results of the public opinion survey.

- ▶ *Newsletter #3 (May 2002)*: Announced the third public workshop, summarized and mapped the location of four conceptual transportation improvement options and supporting elements, and provided information on various public involvement opportunities to enhance project awareness and understanding.
- ▶ *Newsletter #4 (November 2002)*: Updated the public on the alternatives to be analyzed in the DEIS, provided information on the updated project Web site, provided a status report on the EIS process, and described the next steps that will be taken in the process.
- ▶ *Newsletter #5 (February 2003)*: Announced the completion of the DEIS and the start of the 45-day public review period. The newsletter indicated local viewing locations, request for public comments on the alternatives, and the schedule of the DEIS Public Hearing.
- ▶ *Newsletter #6 (March 2003)*: Announced the availability of the DEIS for public review, indicating viewing locations and how the public could comment on the alternatives evaluated in the DEIS. The newsletter also announced the DEIS Public Hearing, including description of activities to occur at the hearing.
- ▶ *Newsletter #7 (November 2003)*: Announced the identification of the Preferred Alternative. The newsletter also announced the availability of the FEIS for public review, indicating viewing locations and how the public could comment on the alternatives evaluated.

Each newsletter was posted on the project Web site. Copies of these seven newsletters are included in Volume 2, Appendix C.

7.4.2.1 Project Mailing List

An initial project mailing list of approximately 7,000 names was developed from Lewis & Clark County and Jefferson County property ownership records and contained the following:

- ▶ Property owners located 0.8-kilometer (0.5-mile) either side of the I-15 study area
- ▶ Businesses along the corridor or businesses that utilized the corridor
- ▶ County, city, and state elected officials and agency staff
- ▶ Local interest groups and non-governmental organizations having an interest in the project
- ▶ Emergency service providers throughout the area

- ▶ Special residential developments including elderly and assisted-living group homes, rest homes and Section 8 housing
- ▶ Other residential developments including apartment complexes, mobile home parks, and rental units along the I-15 Corridor

The first project newsletter contained a stamped, pre-addressed insert asking recipients to return if they were interested in receiving future project information and newsletters. This resulted in a more focused mailing list of approximately 2,000 interested citizens. Sign-in sheets from the public workshops were cross-checked with the mailing list and new names added after each workshop. Individuals leaving a telephone hot line message, a Web site comment or submitting written comments were cross-checked with the mailing list and new names added on a continuing basis.

7.4.3 Telephone Information Hotline

A local voice messaging telephone number (458-4789) was established in July 2001 enabling the public to leave messages, comments, or ask questions regarding the project. The hotline greeting was updated regularly to provide current project information and the schedule of upcoming meetings and events.

The hotline was checked at least twice weekly and a message tracking system was established to ensure responses were handled in a timely manner. The hotline number was published in each project newsletter, on project business cards, in all news releases, at each public workshop, and in each workshop notice and summary. Thirty-two messages were received on the hotline.

7.4.4 Project Web Site

The I-15 Corridor EIS Web site (www.I-15HelenaEIS.com) was created in August 2001. This comprehensive Web site provided project information throughout the EIS process, including: project overview, description of the Project Team, history of the project, purpose and need for the EIS, description of the Advisory Committee and its actions, the EIS process, upcoming project activities, public meeting announcements, opportunities for public involvement including a comment form, project goals, various project improvement options that came out of the screening process, project schedules, and links to related Web sites. The site was updated with current project information and meeting announcements as necessary. There were more than 4,100 visits to the I-15 Corridor EIS Web site.

7.4.5 Media Information Program

Throughout the EIS process, a broad media information program utilizing local print and electronic media was conducted to ensure a high degree of public awareness and

knowledge of the project and opportunities for public involvement input to project decisions. Program elements included regular news releases in advance of and following major project activities (public workshops, formation of the Advisory Committee, public opinion survey, definition of project goals and evaluation criteria, identification and evaluation of alternatives, etc.), public service advertisements in advance of the public workshops, a newspaper insert and questionnaire, and regular on-air radio and television interviews and talk shows.

Interestingly, 80% of respondents to the public opinion survey conducted in November 2001 indicated they had heard about the project through newspaper articles, and a total of 71% indicated they had heard through television and radio. In addition, 65% indicated they wanted to be informed about the project through newspaper articles, and 52% indicated their preference was television and radio public service announcements, rather than public meetings.

7.4.5.1 Newspaper Questionnaire Insert

In May 2002 a newspaper insert was published in the *Helena Independent Record*, *Jefferson County Courier*, and *Boulder Monitor* describing the four conceptual transportation improvement options and 12 supporting project elements. The survey included a mail-back questionnaire. Five hundred and fifty-one surveys were returned that indicated:

- ▶ 97% of respondents felt that they understood the four conceptual transportation improvement options under consideration for the I-15 study area either well or a little.
- ▶ 91% of respondents felt the four conceptual transportation improvement options addressed the transportation issues in the I-15 study area either well or a little.
- ▶ 54% of respondents indicated a preference for a northern alternative as best addressing the issues in the I-15 study area.
- ▶ Approximately one-third of the respondents indicated they felt that more than one improvement option was needed to address the issues in the study area with three combinations most often indicated: northern and southern interchange improvements, northern and central interchange improvements, and a combination of all three of the interchange options.
- ▶ Of the supporting elements, a majority of the responses favored an improved truck route, connecting/paving the west side Frontage Road to Colonial Drive, and providing pedestrian and bicycle lanes/bikeways at I-15 crossings.

Local newspapers utilized throughout the media information program included:

- ▶ *Helena Independent Record* (daily)
- ▶ *Boulder Monitor* (weekly)
- ▶ *Jefferson County Courier* (weekly)
- ▶ *Queen City News* (weekly)

Local television and radio stations included:

- ▶ KTVH
- ▶ KBLL
- ▶ KXLF (Capital Bureau)
- ▶ KMTX
- ▶ KFBB
- ▶ KCAP
- ▶ HCTV (Helena Public Access Television)

7.4.6 Environmental Justice (EJ) Outreach

In an effort to ensure that project information was distributed to low-income and minority populations in compliance with EO 12898, a specific outreach program was conducted to reach potential environmental justice populations. The environmental justice outreach was based upon low-income and minority populations that could be identified within the study area. These populations were identified using U.S. Census Bureau data and through local and agency contacts.

The first newsletter was sent to 7,000 residents (of which, many were identified as potential environmental justice populations) in Helena, East Helena, Lincoln, Townsend, Augusta, Montana City, Boulder, and Clancy. Residents of high-density population areas, elderly and assisted-living group homes, apartment complexes, identified mobile home parks, and Section 8 housing complexes were included on this initial mailing. The first newsletter contained a stamped, pre-addressed insert for people to indicate their interest in receiving future project updates and newsletters. All who responded (via the insert) were placed on the updated project mailing list for future mailings.

7.5 Comments Received

Through December 2002, 5,617 comments were received. These were in the form of written letters, workshop comment sheets, Web site feedback, the public opinion survey, the newspaper insert and mail-back, project newsletter comments, E-mails received, and telephone information hotline comments. A summary of the comments received is shown in **Table 7-4**.

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Table 7-4
Summary of Public Comments Received*

| Comment | 1st Open House | 2nd Open House | 3rd Open House | Public Opinion Survey Question #4 ⁽¹⁾ | Public Opinion Survey Question #19 & 20 ⁽²⁾ | Telephone Hotline | Project Website | Project Newsletters | Newspaper Insert | All other Comments |
|--|----------------|-------------------|----------------|--|--|-------------------|-----------------|---------------------|-------------------|--------------------|
| Need a new interchange north of Capitol Avenue/Prospect Street (specific site not given) | 3 | 7 | 2 | 2 | 99 | | 1 | 1 | 13 | 1 |
| Need a new interchange south of Capitol Avenue/Prospect Street (specific site not given) | 3 | 6 | 7 | | 55 | | 1 | 1 | 11 | 2 |
| Need a new interchange at Forestvale Road | 1 | 5 | 8 | 1 | 37 | 1 | 1 | 1 | 63 | 5 |
| Do not build a new interchange at Forestvale Road | 1 | 2 | 1 | | 13 | | 1 | | 29 | |
| Need a new interchange at Custer Avenue | 10 | 78 ⁽³⁾ | 12 | 4 | 117 | 2 | 3 | 4 | 95 | 14 |
| Do not build a new interchange at Custer Avenue | 1 | | 3 | | 3 | | | | 14 | |
| Need to fix the Capitol Avenue/Prospect Street interchange and/or Fee Street | 5 | 13 | 9 | 176 | 85 | 1 | 4 | 2 | 77 | 7 |
| Do not improve the Capitol Avenue/Prospect Street interchange | | | 1 | | | | | | 2 | |
| Need a new interchange at Saddle Drive | | 3 | 10 | | | | | | 54 | |
| Do not build a new interchange at Saddle Drive | 1 | | 7 | | | 2 | | | 25 | 1 |
| Need a new intersection or underpass at Broadway | 3 | 9 | 3 | | 30 | | 4 | | 22 | |
| Do not build a new interchange or underpass at Broadway | 4 | 11 | 5 | | 13 | 1 | 1 | | 17 | 2 |
| Need more interchanges (specific site not given) | 2 | 1 | | 8 | 24 | | | | 2 | |
| Do not build a new interchange at Sierra Road | | | | | | | | | | 68 ⁽⁵⁾ |
| Need more frontage roads/frontage road connections (specific locations not given) | | 4 | 2 | | 4 | | 2 | | 9 | |
| Need to connect/pave the west side I-15 frontage road to Colonial Drive | 5 | 13 | 7 | | 27 | 1 | 1 | 1 | 27 | 1 |
| Need to improve or widen Cedar Street | | 1 | 3 | 38 | 23 | | | 1 | 8 | |
| Need to improve or widen Custer Avenue | 5 | 2 | 8 | | 31 | | 1 | | 41 | 1 |
| Need to improve the Lincoln Road interchange (capacity and/or safety) | | 1 | | 45 | 10 | | | 1 | 18 | 1 |
| Need to improve the Montana City interchange (capacity and/or safety) | | | | 5 | 2 | | | | 4 | |
| Need to extend the east side I-15 frontage road to Lincoln Road | 1 | | | | 6 | | | | 11 | |
| Need a better/direct connection between the Capitol interchange and Colonial Drive | 2 | 2 | 6 | 1 | 1 | | | | 14 | 1 |
| Need better accommodations for bicyclists and pedestrians | 12 | 10 | 4 | 4 | 44 | | | | 28 | 7 |
| Need to re-open culvert at Broadway for bicyclists and pedestrians | 4 | | | | | | | 1 | 42 ⁽⁴⁾ | 1 |
| Need to add lanes on I-15 between Capitol and Cedar | | 1 | | 4 | | | | | 3 | |
| Need to encourage alternative means/modes of transportation | 7 | 6 | 2 | | 17 | | | 1 | 15 | 3 |
| Need an east-west truck route/US 12 bypass | 10 | 14 | 5 | 4 | 47 | 1 | 3 | 1 | 51 | 1 |
| Need to improve emergency access (numerous sites) | 3 | 5 | 2 | | 4 | | | | 5 | |
| Need to improve Boulder Avenue under I-15 (for multiple uses) | 2 | | 3 | | 2 | 1 | 1 | | 5 | |
| Need better access to hospital | 2 | | | | 7 | | | | 14 | |
| Need an underpass at Montana Avenue and the railroad | 6 | | | | 22 | | | | 23 | 1 |
| Need to improve North Montana Avenue | 3 | 3 | | 3 | 53 | 2 | 2 | 1 | 51 | 3 |
| Need changes on the interstate to relieve congestion on N. Montana | | 2 | 3 | | 47 | | 1 | | | 2 |
| Need more north-south arterials | 1 | | | | 4 | | | | 8 | |
| Need to improve freeway on/off ramps | | | 1 | 38 | 3 | | | | 2 | |
| Need signal lights/traffic signal coordination/better signs (numerous locations) | 2 | | | 18 | 7 | | | | 6 | 1 |
| Need better access to residences | | | | | | | | | | |
| Need to make changes to accommodate growth | | 1 | 1 | | 55 | | | | 2 | |
| Need to prioritize needs/actions | 3 | 2 | 1 | | 10 | | | | 8 | |
| Concerned that project will create urban sprawl | | 2 | 1 | | 19 | | | | 6 | |
| Concerned about excessive traffic and congestion on surface streets | 4 | 1 | 3 | 3 | 33 | | 1 | | 2 | |
| Concerned about safety (speed limits, poor visibility, construction zones, aggressive drivers, | 3 | 3 | 1 | 49 | 23 | 1 | 2 | | 13 | 2 |
| Concerned that due to politics, poor planning, etc. may not make best project decisions | 2 | 1 | | | 43 | | | | 1 | 1 |
| Concerned that special interest groups will harm the process | | 1 | 1 | | 27 | | | | 12 | 1 |
| Concerned about NEPA process/study costs/time to complete EIS | 1 | | 2 | | 28 | 2 | | | 5 | 1 |
| Concerned that cost factors are too high (increased taxes, etc.) for value | 1 | | | | 31 | 1 | | | | |
| Concerned that solving this problem may cause other problems (especially in residential | | | | | 32 | | 2 | | 6 | |
| Let's take action/need to get something done soon | | | | | 57 | | 1 | | 27 | 1 |
| Requests for information/add me to the mailing list/questions about the process | 3 | | | | | 10 | 10 | 1 | 1 | 4 |
| TOTAL | 247 | 256 | 527 | 1494 | 1117 | 69 | 60 | 867 | 915 | 65 |

5617

⁽¹⁾ Public Opinion Survey Question #4: What other problems are there in getting on and off I-15 at the existing interchanges?

⁽²⁾ Public Opinion Survey Questions 19 and 20: Other concerns about the implementation of transportation projects on I-15?

Other comments you would like to make about the I-15 corridor or about the (EIS) study?

⁽³⁾ Includes 61 signatures from petition requesting interchange at Custer Avenue.

⁽⁴⁾ Includes 41 signatures from petitions.

⁽⁵⁾ Includes 68 signatures from petition.

Highest numbers of comments from each opportunity to respond

Comments regarding possible I-15 interchange improvements

Comments regarding possible project supporting elements

*Comments received 8/1/01 through 12/31/02

7.6 Public Involvement Activities

Every reasonable effort has been made during the development of the DEIS and FEIS to inform and involve the public. A list of the major public involvement activities undertaken is shown in **Table 7-5**.

Table 7-5
Public Involvement Activities

| Date | Local Group or Individual |
|--------------|---|
| 7/11/2001 | Montana Environmental Information Center (MEIC) Meeting |
| 7/13/2001 | Project Telephone Information Hotline established |
| 8/19/2001 | News Release (Boulder Monitor) |
| 8/20-22/2001 | I-15 Land Use Advisory Group Workshops |
| 8/21/2001 | Meeting with Plan Helena |
| 8/21/2001 | Meeting with State Representative Dave Lewis |
| 8/26/2001 | Project Newsletter #1 |
| 8/29/2001 | News Release (Independent Record) |
| 9/11/2001 | Public Workshop #1 |
| 9/12/2001 | Advisory Committee Meeting #1 |
| 9/13/2001 | Hometown Helena Pride Meeting |
| 9/20/2001 | News Release (Independent Record) |
| 9/26/2001 | News Release (Jefferson County Courier) |
| 10/5/2001 | Project Web Site (www.I-15HelenaEIS.com) established |
| 10/10/2001 | News Release (Boulder Monitor, Independent Record) |
| 10/12/2001 | News Release (Independent Record) |
| 10/17/2001 | News Release (Jefferson County Courier, Boulder Monitor) |
| 10/23/2001 | Second meeting with MEIC |
| 10/23/2001 | Private Citizen Meeting |
| 10/23/2001 | Advisory Committee Meeting #2 |
| 10/28/2001 | News Release (Jefferson County Courier, Boulder Monitor) |
| 11/7/2001 | Public Opinion Survey distributed |
| 11/15/2001 | Advisory Committee Meeting #3 |
| 1/10/2002 | Project Newsletter #2 |
| 1/17/2002 | News Release (Independent Record) |
| 1/25/2002 | News Release (Jefferson County Courier) |
| 1/29/2002 | Interview with Independent Record |
| 1/29/2002 | Coffee Break Interview (KBLL) |
| 1/29/2002 | Public Workshop #2 |
| 1/29/2002 | Helena Improvement Society Meeting |
| 1/30/2002 | Advisory Committee Meeting #4 |
| 1/31/2002 | News Release (Independent Record) |
| 2/8/2002 | Advisory Committee Meeting #5 |
| 4/17/2002 | Advisory Committee Meeting #6 |

continued

Table 7-5 (continued)
Public Involvement Activities

| Date | Local Group or Individual |
|-------------|--|
| 4/17/2002 | Helena High School Presentations to Students |
| 4/18/2002 | Downtown Helena Pride Meeting |
| 4/18/2002 | Try Another Way State Employers (TAWSE) Meeting |
| 5/4/2002 | News Release (Independent Record) |
| 5/7/2002 | Project Newsletter #3 |
| 5/8/2002 | News Release (Boulder Monitor) |
| 5/14/2002 | Coffee Break Interview (KBLL) |
| 5/14/2002 | Alternative Energy Resource Organization (AERO) Meeting |
| 5/15/2002 | Newspaper Insert and Questionnaire (Independent Record, Jefferson County Courier, Boulder Monitor, Silver State Post, Townsend Star) regarding alternatives/ supporting elements |
| 5/15/2002 | News Release (Independent Record, Jefferson County Courier) |
| 5/29/2002 | News Release (Independent Record, Jefferson County Courier) |
| 6/5/2002 | News Release (Independent Record) |
| 6/5/2002 | Coffee Break Interview (KBLL) |
| 6/5/2002 | Private Developer Meeting |
| 6/5/2002 | Public Workshop #3 |
| 6/6/2002 | Advisory Committee Meeting #7 |
| 6/7/2002 | News Release (Independent Record) |
| 6/20/2002 | News Release (Independent Record) |
| 6/26/2002 | News Release (Jefferson County Courier) |
| 7/3/2002 | News Release (Queen City News) |
| 7/17/2002 | News Release (Jefferson County Courier) |
| 7/24/2002 | News Release (Independent Record) |
| 7/24/2002 | Advisory Committee Meeting #8 |
| 7/24/2002 | Private Developer Meeting |
| 11/5/2002 | News Release (Independent Record) |
| 11/6/2002 | News Release (Jefferson County Courier) |
| 11/22/2002 | Project Newsletter #4 |
| 12/3/2002 | Private Developer Meeting |
| 12/4/2002 | Advisory Committee Meeting #9 |
| 12/4/2002 | Project Coordination—Montana Rail Link |
| 12/5/2002 | Private Developer Meeting |
| 12/5/2002 | Meeting with Independent Record Editorial Board |
| 2/8/2003 | News Release (Independent Record) |
| 2/10/2003 | Project Newsletter #5 |
| 2/12/2003 | News Release (Jefferson County Courier, Boulder Monitor) |
| 3/4/2003 | Project Newsletter #6 |
| 3/5/2003 | Radio Show Announcement (Queen City News) |
| 3/5/2003 | News Release (Jefferson County Courier) |
| 3/9/2003 | News Release (Independent Record) |

continued

Table 7-5 (continued)
Public Involvement Activities

| Date | Local Group or Individual |
|-------------|--|
| 3/10/2003 | News Release (Independent Record) |
| 3/10/2003 | Interview with KTVH |
| 3/11/2003 | News Release (Independent Record) |
| 3/11/2003 | Coffee Break Interview (KBLL) |
| 3/11/2003 | Interview with Independent Record |
| 3/11/2003 | Meeting with Helena Hospitality Group |
| 3/11/2003 | DEIS Public Hearing |
| 3/12/2003 | Interview with Jefferson County Courier, Boulder Monitor |
| 3/12/2003 | Advisory Committee Meeting #10 |
| 3/12/2003 | News Release (Independent Record) |
| 3/13/2003 | News Release (Independent Record) |
| 3/16/2003 | Editorial (Independent Record) |
| 3/19/2003 | News Release (Jefferson County Courier, Boulder Monitor) |
| 5/16/2003 | News Release (all media) |
| Nov. 2003 | Project Newsletter #7 |
| Nov. 2003 | News Release |

7.7 Distribution and Review of the DEIS

A Notice of Availability (NOA) of the DEIS and the date for the Public Hearing was announced in the *Helena Independent Record*, the *Jefferson County Courier*, the *Boulder Monitor*, and local electronic media. The NOA was also published in the Federal Register on February 21, 2003. A notification of the availability of the DEIS and the schedule for the Public Hearing was mailed to those on the project mailing list. In addition, this information was made available in project newsletters (#5 and #6), project Web site listings, and the project telephone hotline.

The DEIS was distributed for official review to the federal, state, and local agencies listed in Chapter 9.0, to members of the public at their request who could not utilize the formal viewing locations, and to the Advisory Committee members listed in **Table 7-3**. The DEIS was available for public review on February 14, 2003, with the 45-calendar-day public review period originally concluding on March 31, 2003. However, due to problems in the delivery of the DEIS to the EPA, the NOA in the Federal Register indicated availability of the DEIS on February 21, 2003, with the public review period concluding on April 7, 2003. This extension of the public review period was announced in the local print and electronic media, Project Newsletter #6, and on the project Web site and telephone information hotline.

The DEIS was available for public review during the 45-day public review period at 11 viewing locations (see Section 7.9). Two new locations (Rossiter Elementary School and Bob's Valley Market) were added for review of the FEIS.

Written comments were mailed to:

Mark Studt, P.E.
Project Manager
Montana Department of Transportation
2701 Prospect Avenue (59601-9746)
P.O. Box 201001 (59620-1001)
Helena, Montana
E-mail: mstudt@state.mt.us

7.8 Public Comments and Hearing on the DEIS

A Public Hearing was conducted on March 11, 2003, at the West Coast Colonial Hotel, 4:30 p.m. to 7:30 p.m. Notification of the Public Hearing was included in Project Newsletter #6, news releases and public service announcements in local print and electronic media, and the project Web site and telephone information hotline.

The DEIS Public Hearing was conducted in an open house format providing opportunity for the public to talk directly with and ask questions of the Project Team members. A transcriber also was available to record oral comments and receive written comments during the entire Public Hearing. A total of 123 persons attended the Public Hearing.

During the hearing a formal presentation of the alternatives, the process of their definition, and the schedule of upcoming project activities was made. The formal presentation also included an opportunity for the public to comment on the alternatives in the DEIS and make other statements about the conduct of the project.

During the 45-day public review period (including the Public Hearing) 75 comments on the DEIS alternatives were received. These indicated the following:

- ▶ Thirty-four comments in favor of Alternative 1.
- ▶ Eight comments in favor of Alternative 2.
- ▶ Twenty comments mentioned various non-alternative specific interests and concerns, including traffic impacts to Broadway, traffic impacts along Frontage Road, fix Capitol interchange (first), and support for TDM and pedestrian/bicycle improvements.
- ▶ Zero comments in favor of the No-Action Alternative.

Reasons cited in comments received favoring Alternative 1 included:

- ▶ Located within designated urban area
- ▶ Better serves existing commercial area
- ▶ Improves access to recreational areas
- ▶ Fewer environmental impacts
- ▶ Provides better east-west connectivity
- ▶ Does not promote urban sprawl
- ▶ Compatible with current city and county growth plans

Reason cited in comments received favoring Alternative 2 included:

- ▶ Provides additional crossing of I-15
- ▶ Funding available and design completed—ready to build
- ▶ The Custer Avenue corridor is already congested

In addition, during the public review period, eight agencies and civic organizations indicated their preferences, including:

- ▶ City of Helena—Alternative 1 (unanimous)
- ▶ Lewis & Clark County—Alternative 1 (unanimous)
- ▶ I-15 Corridor Advisory Committee—Alternative 1 (unanimous)
- ▶ U.S. Environmental Protection Agency (EPA)—No preference, but acknowledged that Alternative 1 has fewer environmental impacts
- ▶ Plan Helena—Alternative 1
- ▶ City of Helena/Lewis & Clark County Planning Board—Alternative 1 (unanimous)
- ▶ Try Another Way State Employees—Alternative 2 (unanimous)
- ▶ U.S. Department of Interior—No preference

Although they never submitted their comments to MDT during the public review period, the Transportation Coordinating Committee (TCC) also unanimously recommended Alternative 1.

On May 7, 2003 the state Transportation Commission concurred with MDT's recommendation that Alternative 1 be identified as the Preferred Alternative.

All oral and written comments received during the 45-day public review period and the Public Hearing are included in the official project record, and were considered in the identification of a Preferred Alternative for the I-15 Corridor in the FEIS. Each of these comments is included in Volume 2, Appendix A of this FEIS along with the Public Hearing Transcript and responses to comments received.

7.9 Distribution and Review of the FEIS

A Notice of Availability (NOA) of the FEIS will be announced in the *Helena Independent Record*, the *Jefferson County Courier*, and the *Boulder Monitor*. The NOA will also be published in the Federal Register and mailed to those on the project mailing list. The FEIS will be distributed for official review to the federal, state, and local agencies listed in Chapter 9.0, to members of the public at their request who cannot utilize the formal viewing locations listed below, and to the Advisory Committee members listed in **Table 7-3**.

This document will be advertised and available for public review and comment for 30 days. Following review of the comments received on the FEIS, the Federal Highway Administration will issue a Record of Decision documenting the decisions made for the I-15 Corridor (Montana City to Lincoln Road) EIS.

The FEIS is available for public review during the 30-day public review period at the following locations:

FEIS Viewing Locations

Montana Department of Transportation
Environmental Services
2701 Prospect Avenue, Room 111
Helena, MT 59601
(406) 444-0804

Federal Highway Administration
2880 Skyway Drive
Helena, MT 59602
(406) 449-5302

Jefferson County
Clerk & Recorder's Office
Jefferson County Courthouse
Boulder, MT 59632
(406) 225-4020

Lewis & Clark County
City and County Transportation Office
City and County Building, Room 404
316 North Park
Helena, MT 59601
(406) 447-8457

East Helena City Hall
City Clerk's Office
7 East Main
East Helena, MT 59635
(406) 227-5321

Rossiter Elementary School
1497 E Sierra Road
Helena, MT 59602
(406) 447-8860

FEIS Viewing Locations (cont'd.)

Lewis & Clark County Library
120 South Last Chance Gulch
Helena, MT 59601
(406) 447-1690

Boulder Community Library
202 South Main
Boulder, MT 59632
(406) 225-3241

Broadwater Community Library
201 North Spruce
Townsend, MT 59644
(406) 266-5060

Clancy Library
6 North Main
Clancy, MT 59634
(406) 933-5254

Bob's Valley Market
7507 No. Montana Avenue
Helena, MT 59602
(406) 458-5140

Montana City Store
1 Jackson Creek Road
Montana City, MT 59634
(406) 442-6625

Carter & Burgess, Inc.
707 17th Street, Suite 2300
Denver, CO 80202
(303) 820-4894

CHAPTER 8.0: LIST OF PREPARERS

The primary consultant for this project is Carter & Burgess, Inc. Carter & Burgess used several subcontractors to provide technical expertise on various portions of this EIS. These subcontractors include:

- ▶ AM Tech Services (Helena): Administrative services including meeting participation, coordination and documentation, public hearing transcription, document distribution, maintenance of mailing list and clipping of news articles
- ▶ National Research Center (Denver, Colorado): Public opinion survey
- ▶ Lisa Druckenmiller (Billings/Canada): Rare plant survey
- ▶ The Settlement Center (Bozeman): Facilitation of Advisory Committee meetings
- ▶ Tracks of the Past (Columbia Falls): Preparation of *Cultural/Historical Resources Report*
- ▶ Land & Water Consulting, Inc. (Helena): Preparation of *Biological Resources Report* (BRR) including wildlife, fisheries, wetlands and other biological resources, and groundwater analysis
- ▶ Aaberg Cultural Resource Consulting Service (Billings): Preparation of *Cultural/Historical Resource Impact Report*

Table 8-1 lists the representatives of the agencies and firms responsible for preparation and review of the EIS, with their project responsibility, education and experience.

Table 8-1
List of Preparers

| Name, Title and Project Responsibility | Education, Registration | Experience |
|--|---|--|
| U.S. Department of Transportation, FHWA | | |
| Carl D. James, P.E./P.L.S. EIS Reviewer | Transportation Specialist Registered Professional Engineer (CO) | Over 30 years experience in planning, design, construction, the environment, and right-of- way |
| Gene R. Kaufman, P.E. EIS Reviewer | BS, Construction Engineering Technology Registered Professional Engineer | 8 years experience in construction and project oversight |

continued

Table 8-1 (continued)
List of Preparers

| Name, Title and Project Responsibility | Education, Registration | Experience |
|--|---|--|
| U.S. Department of Transportation, FHWA (cont'd.) | | |
| Dale W. Paulson EIS Reviewer | BS, Civil Engineering | Over 30 years experience in highway engineering and environmental review |
| Lloyd H. Rue, P.E. EIS Reviewer | BS, Civil Engineering MS, Civil Engineering Register Professional Engineer (CA) | 16 years experience in geometric design, traffic engineering, and safety |
| Montana Department of Transportation | | |
| Jason R. Giard, P.E. Engineering Services Supervisor-Great Falls District EIS Reviewer | BS, Civil Engineering Registered Professional Engineer | Over 25 years experience |
| Tom S. Martin, P.E. Consultant Design Manager EIS Reviewer | BS, Civil Engineering Registered Professional Engineer | 10 years experience in design and project management of transportation facilities |
| Jean Riley, P.E. Engineering Section Supervisor-Environmental Services EIS Reviewer | BS, Civil Engineering Registered Professional Engineer | 21 years experience in civil engineering |
| Mark W. Studt, P.E. Consultant Project Engineer EIS Reviewer | BS, Civil Engineering MS, Civil Engineering Registered Professional Engineer | 10 years experience in structural bridge design |
| Don Dusek Traffic Engineer EIS Reviewer | BS, Civil Engineering Registered Professional Engineer | 27 years experience in traffic engineering with specialized experience in geometrics and traffic engineering studies |
| Carter & Burgess, Inc. | | |
| Diana Bell EIS Task Manager | BS, Landscape Architecture | 10 years experience in environmental planning |
| Ian Chase Noise | BA, Biology | 4 years experience in the transportation and environmental fields |
| Kim Gambrell, AICP Project Manager | BA, Anthropology MA, Social Science Certified Planner | 23 years experience in environmental analysis and project management |

continued

Table 8-1 (continued)
List of Preparers

| Name, Title and Project Responsibility | Education, Registration | Experience |
|---|---|---|
| Carter & Burgess, Inc. (cont'd.) | | |
| Rich Garcia GIS, Right-of-Way | BA, Geography | 5 years experience in environmental planning, GIS |
| Craig Gaskill, P.E., AICP Engineering Task Manager Alternatives Development Task Manager | BS, Civil Engineering MS, Civil Engineering Registered Professional Engineer Certified Planner | 20 years experience in planning, design, and environmental analysis of transportation facilities |
| Troy Halouska Farmland, Comments and Coordination | BA, Geography | 4 years experience in environmental planning |
| Chris Hudon Hazardous Materials | BS, Natural Resource Management and Engineering | 9 years experience in environmental management and remediation services |
| Tracey MacDonald Senior Planner Land Use, Transportation, Pedestrian/Bicycle Facilities, Parks and Recreation Resources, Cumulative Impacts | BA, International Business BS, Political Science Graduate Courses in Planning | 10 years experience in the transportation and environmental fields |
| Gina McAfee, AICP Purpose and Need, Air Quality Impacts | BS, Landscape Architecture Certified Planner | 24 years experience in environmental analysis and project management |
| Tom Ritz, P.E. Structural Engineer | BS, Civil Engineering Registered Professional Engineer | 9 years experience in structural design |
| Lindsey Royce GIS | BA, Environmental Studies | 3 years planning experience |
| Ed Schumm, AICP Transportation Analysis | BS, Information Systems Certified Planner | 14 years experience in transportation planning |
| Bill Sirois Alternatives, Land Use, Transportation | BA, Financial Management MA, Urban and Regional Planning | 11 years experience in multi-modal transportation planning in both the public and private sectors |
| Mary Speck EIS Technical Editor | BA, Foreign Languages | 20 years experience in public information, technical writing, and marketing |
| Wendy Wallach Visual Character, Cultural Resources | BA, Geography MA, Urban and Regional Planning | 7 years experience in environmental planning |

continued

Table 8-1 (continued)
List of Preparers

| Name, Title and Project Responsibility | Education, Registration | Experience |
|---|---|--|
| Carter & Burgess, Inc. (cont'd.) | | |
| Kirk Webb Social and Economic | BA, Geography Advanced Certificate in GIS | 2 years experience environmental planning 4 years experience GIS |
| Amy Wiedeman Water Resources/Water Quality Floodplains, Environmental Justice | BS, Environmental Studies MA, Urban and Regional Planning | 2 years experience in environmental planning |
| David Woolfall, P.E. Traffic Engineer Conceptual Design Task Manager | BS, Civil Engineering Registered Professional Engineer | 13 years experience in traffic engineering |
| Aaberg Cultural Resource Consulting Service | | |
| Steve Aaberg Cultural/Historical Resources | BS, Archaeology | 25 years experience in cultural resource management |
| Land and Water Consulting, Inc. | | |
| Jeff Berglund Preparation of Biological Resource Report (BRR)—includes wetland delineation, sensitive and T&E species analysis, general biological resources analysis. | BA, Biology Professional Wetland Scientist Certified Wildlife Biologist | 13 years experience in wetland delineations and functional assessments, vegetation and wildlife studies, and mitigation and design |
| Ross Miller, P.E. Groundwater Analysis | BS, Geological Engineering MS, Hydrogeology Registered Professional Engineer | 19 years experience in hydrogeology and engineering |
| Lisa Druckenmiller | | |
| Lisa Druckenmiller Rare Plant Survey | BS, Botany MS, Botany | 14 years experience as botanist |
| Tracks of the Past | | |
| Kathy McKay Cultural/Historical Resources Report | BA, Classics and Environmental Studies MA, American History | 15 years experience in cultural resources management |

CHAPTER 9.0: LIST OF RECIPIENTS

LOCAL

Mr. Ron Alles
Lewis & Clark County
Administrative Office
316 N. Park Avenue
Helena, MT 59623

Mr. Tim Burton
City Manager
City of Helena
316 N. Park Avenue
Helena, MT 59623

Ms. Sharon Haugen
County Planning Director
Lewis & Clark County Planning Office
City/County Building
316 North Park Avenue
Helena, MT 59624-1724

Mr. Randy Lilje
Director of Parks and Recreation
316 N. Park Avenue
Helena, MT 59623

Mr. Tom Lythgoe
County Commissioner
Jefferson County
36 Tiger Gulch
Clancy, MT 59634

Ms. Kathy Macefield
Senior Planner
City and County Building
316 N. Park Avenue
Helena, MT 59623

Mr. Mike Murray
Lewis & Clark County Commissioner
316 N. Park Avenue
Helena, MT 59624-1724

Honorable James E. Smith
Mayor, City of Helena
316 North Park Avenue
Helena, MT 59623

Mr. Harold Stepper
County Planner/Zoning Administrator
Jefferson County Planning and Zoning
Courthouse Annex
Box H
Boulder, MT 59632

Mr. Ed Tinsley
Lewis & Clark County Commissioner
316 N. Park Avenue
Helena, MT 59624-1724

Ms. Anita Varone
Lewis & Clark County Commissioner
316 N. Park Avenue
Helena, MT 59624-1724

East Helena City Hall
7 E. Main Street
East Helena, MT 59635

Floodplain Administrator
Lewis & Clark County
221 Breckenridge
Helena, MT 59601

LOCAL (cont'd.)

Helena City Planning Department
316 North Park
Helena, MT 59622

Lewis & Clark County
Water Quality Protection District
1930 9th Avenue
Helena, MT 59601

STATE

Mr. Mark Baumler
Montana Historical Society
Review and Compliance Officer
225 North Roberts
P.O. Box 201201
Helena, MT 59620-1202

Mr. Paul Cartwright
Montana Dept. of Environmental Quality
Planning, Prevention & Assistance Bureau
1520 E. Sixth Avenue
Helena, MT 59620-0901 (2 copies)

Mr. Steve Dalbey
Montana Dept. of Fish, Wildlife & Parks
Fisheries Division
Helena Area Resource Office
1420 E. Sixth Avenue
Helena, MT 59601

Ms. Trista Glazier
Montana Dept. of Environmental Quality
Permitting and Compliance Division
1520 E. Sixth Avenue
Helena, MT 59620 (3 copies)

Department of Fish, Wildlife and Parks
Field Services Division
1400 Eight Avenue
Helena, MT 59620

Department of Natural Resources &
Conservation
Office of the Director
1625 11th Avenue
Helena, MT 59620-1601

Department of Transportation
Aeronautics Division
2630 Airport Road
Helena, MT 59620-0507

Montana Department of Education
Montana State Library
1515 East 6th Avenue
Helena, MT 59620-1800

FEDERAL

Mr. Larry Cole
U.S. Department of Agriculture
U.S. Forest Service
Helena Ranger District
2001 Poplar
Helena, MT 59601

Mr. Scott Jackson
U.S. Fish & Wildlife Service
100 No. Park Avenue, Suite 320
Helena, MT 59601

Ms. Deborah Lebow
Environmental Protection Agency
NEPA-EcoSystem Protection
Mail Stop 8EPR-EP
999 18th Street
Denver, CO 80202

Mr. Stephen Potts
EPA Region 8 Montana Office
Federal Building
301 S. Park Avenue
Helena, MT 59626-0096

Mr. Todd Tillinger, P.E.
Helena Regulatory Office
U.S. Army Corps of Engineers
10 West 15th Street, Suite 2200
Helena, MT 59626

Department of Housing and Urban Dev't.
Montana State HUD Office
7 West 6th Avenue, First Floor
Helena, MT 59601

U.S. Department of the Interior
Bureau of Land Management
Butte District Office
106 N. Park Mount
Butte, MT 59701

U.S. Department of Agriculture
Natural Resource Conservation Service
Helena Field Office
790 Colleen Street
Helena, MT 59601-9713

U.S. Department of the Interior
Director, Office of Environmental Affairs
1849 C Street N.W.
Washington, DC 20240 (9 copies)

U.S. Department of the Interior
U.S. Geological Survey
3162 Bozeman Avenue
Helena, MT 59601

U.S. Department of Transportation
Federal Aviation Administration
Airport District Office
2725 Skyway Drive
Helena, MT 59601

INDIVIDUALS & SPECIAL INTERESTS

Mr. Richard Alberts
Transportation Coordinating Committee
P.O. Box 6684
Helena, MT 59624-6884

Mr. Derek Brown
Project Advisory Committee
Derek Brown Construction
2705 Broadwater
Helena, MT 59601

Ms. Cathy Burwell
Project Advisory Committee
225 Cruse Avenue, Suite A
Helena, MT 59601

Mr. Joe Calnan
Project Advisory Committee
1 Jackson Creek Road
Montana City, MT 59634

Mr. Chick Canterbury
Transportation Coordinating Committee
316 N. Park Avenue
Helena, MT 59601

Mr. John Carter
Project Advisory Committee
55 South Rodney
Helena, MT 59601

Mr. Jim Cottrill
Project Advisory Committee
1912 East 6th
Helena, MT 59601

Mr. Joel Gerhart
Project Advisory Committee
1719 Golden
Helena, MT 59601

Mr. Bob Habeck
Project Advisory Committee
846 East 6th Street
Helena, MT 59601

Mr. George Hoff
Transportation Coordinating Committee
1409 Cannon
Helena, MT 59601

Mr. Victor Kelly
Project Advisory Committee
1360 Van Orsdel
Helena, MT 59602

Mr. Wayne Krieger
Project Advisory Committee
P.O. Box 307
East Helena, MT 59635

Mr. Ray Kuntz
Project Advisory Committee
P.O. Box 5055
Helena, MT 59604

Ms. Marga Lincoln
Project Advisory Committee
432 Last Chance Gulch, #500
Helena, MT 59601

Ms. Ellen Livers
Project Advisory Committee
2475 Broadway
Helena, MT 59601

Mr. Pete McHugh
Project Advisory Committee
4295 McHugh Drive
Helena, MT 59602

INDIVIDUALS & SPECIAL INTERESTS
(cont'd.)

Mr. Bob Marks
Project Advisory Committee
40 Ohio Gulch Road
Clancy, MT 59634

Mr. Ken Morrison
Project Advisory Committee
717 Third Street
Helena, MT 59601

Mr. Steve Netschert
City Commissioner
316 N. Park Avenue
Helena, MT 59601

Mr. Paul Reichert
Project Advisory Committee
225 Cruse Avenue, #B
Helena, MT 59601

Mr. Dave Stahly
Transportation Coordinating Committee
2687 Airport Road
Helena, MT 59601

Mr. Dick Thweatt
Project Advisory Committee
36 Harrison Avenue
Helena, MT 59601

Helena Chamber of Commerce
225 Cruse Avenue
Helena, MT 59601

Montana Motor Carriers Association
501 N. Sanders
Helena, MT 59601

Index

A

Advisory Committee, 2-3, 2-33, 7-1, 7-6
 Agency Coordination
 Cooperating Agencies, 7-1
 Agency Involvement, 1-16
 Advisory Committee, 1-17
 Agency Coordination, 2-3, 7-1
 Interdisciplinary Team, 1-17
 Air Quality, 3-59, 5-5, 5-20, 5-65, 5-104
 EPA, 3-59
 Indirect Impacts, 5-21
 Mitigation, 5-21
 National Ambient Air Quality Standards, 3-59
 Urban Air Toxics, 3-60
 Alternative Modes, 4-41
 Alternatives Development
 Advisory Committee, 2-2
 Alternatives, 2-1
 Evaluation Criteria, 1-17, 2-2
 Interdisciplinary Team, 2-2
 Preferred Alternative, 2-1
 Process, 2-2
 Alternatives Screening
 Alternatives Development, 2-5
 Evaluation Criteria, 2-5
 Screening, 2-5

B

Best Management Practices, 5-36, 5-41, 5-3, 5-6, 5-13, 5-14
 Bicycle, 1-13, 3-39, 4-36
 Bicyclists, 2-6

C

City of Helena, 1-2, 1-6, 1-15, 3-8, 5-81
 Commitment of Resources, 5-9, 5-60, 5-79, 5-115
 Construction, 5-8, 5-52, 5-78, 5-111
 Air Quality, 5-55
 Mitigation, 5-56, 5-78
 Noise, 5-55
 Traffic, 5-56
 Visual, 5-56
 Water Quality, 5-55
 Corps of Engineers, 5-34
 Jurisdictional, 5-71
 Corridor Background

Interstate 15, 1-6
 Transportation, 1-6
 Costs, 2-59
 Cultural Resources, 3-93, 5-3, 5-44, 5-76, 5-110
 State Historic Preservation Officer, 3-93
 Cumulative Impacts, 5-81

D

Demographics, 3-50
 Population and Employment Forecasts, 3-12

E

Economic, 2-6, 3-57, 5-5, 5-18, 5-65, 5-103
 Businesses, 3-57, 5-19
 Commercial, 5-65
 Economic Development, 5-65
 Employment, 3-57, 3-58, 5-19
 Indirect Impacts, 5-19
 Mitigation, 5-19
 Emergency Services
 Emergency, 3-33, 4-27
 Safety, 3-55
 Environmental Consequences
 Ecological Resources Impacts, 5-92
 Land Use (Growth) Impacts, 5-87
 Water Quality/Resources Impacts, 5-88
 Environmental Justice, 3-52, 5-4, 5-15, 5-63, 7-17
 Indirect Impacts, 5-64
 Evaluation Criteria, 2-8, 2-31

F

Farmlands, 6, 3-47, 5-3, 5-13, 5-62, 5-102
 Mitigation, 5-13
 Federal Highway Administration, 1, 8-1
 Floodplains, 3-88, 5-7, 5-41, 5-73, 5-109
 Mitigation, 5-74
 Funding, 5, 2-60

G

Goals and Objectives, 2-7
 Growth, 3-16, 3-59, 5-9
 Land Use, 5-61
 New Development, 3-13

H

Hazardous Waste, 6, 3-96, 5-3, 5-46, 5-76
 Indirect Impacts, 5-46
 Mitigation, 5-47

I

Impacts
 Cumulative, 5-1
 Indirect, 5-1, 5-14
 Interchange Utilization/Operations, 4-13, 4-18
 Interdisciplinary Team, 7-1, 7-4
 Interstate 15, 1-6, 1-12
 Volumes, 4-7

J

Jefferson County, 1-16, 3-7, 5-83

L

Land Use, 3-1, 3-12, 5-3, 5-9, 5-61, 5-101
 Growth, 3-12
 Land Use Advisory Group, 1-13, 3-16, 7-5
 Lewis & Clark County, 1-14, 3-3, 5-81
 Liquefaction, 3-23

M

Media, 7-15
 Mitigation, 2, 7, 5-1
 Air Quality, 5-2, 5-12
 Construction, 5-8, 5-19
 Cultural Resources, 5-7, 5-17
 Cumulative Impacts, 5-94
 Economic, 5-2, 5-12
 Environmental Justice, 5-2, 5-11
 Farmland, 5-1, 5-11
 Floodplains, 5-6, 5-16
 Hazardous Waste, 5-7, 5-17
 Land Use, 5-1, 5-10
 Noise, 5-2, 5-12
 Parks and Recreation, 5-8, 5-18
 Right-of-Way, 5-2, 5-11
 Section 4(f)/6(f), 5-8, 5-18
 Seismic, 5-1, 5-11
 Smart Growth, 5-95
 Social, 5-2, 5-11
 Threatened and Endangered Species, 5-6, 5-17
 Vegetation, Wildlife and Aquatic Resources, 5-5, 5-15

Visual, 5-8, 5-18
 Water Resources and Water Quality, 5-3, 5-13
 Wetlands, 5-14
 Wild and Scenic Rivers, 5-6
 Montana Department of Transportation, 1, 8-2

N

Noise, 6, 3-62, 5-6, 5-21, 5-66, 5-105
 Mitigation, 5-25
 Noise Abatement Criteria, 3-63, 5-23
 Notice of Availability, 7-21, 7-24
 Notice of Intent, 7-4

P

Parks, 5-8
 Parks and Recreation, 3-105, 5-52, 5-77, 5-111
 Pedestrian, 1-13, 2-6, 3-39, 4-36
 Permitting
 Jefferson County, 5-58, 5-10, 5-21
 Lewis & Clark County, 5-58, 5-10, 5-21
 Montana Department of Environmental Quality (MDEQ),
 5-58, 5-10, 5-21
 Permits, 5-58, 5-78, 5-111, 5-112, 5-10, 5-21
 U.S. Army Corps of Engineers, 5-59, 5-10, 5-21
 Population
 Growth, 5-2
 Preferred Alternative, 2, 6, 1-1, 2-56, 4-2, 4-21, 5-9
 Productivity, 5-8, 5-59, 5-79, 5-114
 Property Acquisitions
 Acquisitions, 5-17
 Relocations, 5-17
 Right-of-Way, 5-64
 Public Comments, 7-17, 7-22
 Public Involvement, 2-3, 2-20, 7-1
 Activities, 7-19
 Hotline, 1-17, 2-3, 7-15
 Mailing List, 7-14
 Newsletters, 1-17, 2-3, 7-13
 Public Information, 7-13
 Public Input, 2-33
 Public Opinion Survey, 1-17, 2-3, 7-9
 Public Workshops, 1-17, 7-11
 Scoping Process, 7-4
 Web Site, 1-17, 2-3
 Workshops, 2-3
 Public Transit, 3-35
 Purpose and Need, 1, 1-1
 Pedestrian, 1-3
 Purpose, 1-3

R

Range of Alternatives
 Range of Improvements, 2-9
 Recreation, 5-8
 Right-of-Way, 6, 3-57, 5-3
 Right-of-Way and Utilities, 5-16, 5-64, 5-103
 Mitigation, 5-18
 Roadway Connectivity, 4-32
 Roadway Deficiencies
 Congestion, 1-10, 1-12
 Traffic Volumes, 1-10
 Roadway Operation, 4-4
 Congestion, 3-26
 Roadway Conditions, 3-26
 Traffic Conditions, 3-26
 Traffic Volumes, 3-26

S

Safety, 6, 4-35
 Screening Criteria, 2-8
 Section 4(f)/6(f), 5-115, 6-1
 Section 4(f) Resources, 6-11
 State Historic Preservation Officer, 6-2
 What is Section 6(f)?, 6-16
 Section 4(f)/6(f) Evaluation, 7
 Seismic, 3-21, 5-4, 5-12, 5-62, 5-102
 Indirect Impacts, 5-12
 Liquefaction, 3-22, 5-12, 5-62
 Mitigation, 5-12
 Social, 3-48, 5-4, 5-14, 5-62, 5-102
 Indirect Impacts, 5-63
 Mitigation, 5-15
 Supporting Elements, 2-13, 2-35, 2-37, 2-39

T

Threatened and Endangered Species, 5-8, 5-42, 5-74, 5-109
 Conservation Measures, 5-44
 Sensitive Species, 3-90, 3-93
 U.S. Fish & Wildlife Service, 3-90
 Traffic Volumes, 1-3, 3-29
 Emergency, 1-3
 I-15, 1-3
 Transit, 2-36, 2-38, 3-38
 Transportation, 1-13, 2-6, 3-24, 5-97

Bicycle, 5-97
 Pedestrian, 5-97
 Transportation Demand Management, 2-36, 2-38, 4-42
 Truck, 4-39

U

U.S. Environmental Protection Agency, 3-10

V

Vegetation, Wildlife and Aquatic Resources, 3-84, 5-7, 5-36, 5-72, 5-107
 Aquatic Resources, 3-87
 Mitigation, 5-40, 5-73
 Weeds, 3-85
 Wildlife, 3-86
 Visual, 3-99, 5-3, 5-48, 5-77, 5-110
 Indirect Impacts, 5-77
 Mitigation, 5-51

W

Water Resources and Water Quality, 3-66, 5-6, 5-28, 5-68, 5-105
 Best Management Practices, 5-70
 EPA, 3-66
 Groundwater, 3-71, 5-29, 5-69
 Indirect Impacts, 5-29, 5-30
 Mitigation, 5-32
 Montana Department of Environmental Quality, 3-66
 Surface Water, 3-68
 TMDL, 3-66
 Water Quality, 3-74, 3-75, 3-76, 3-77
 Web Site, 7-15
 Wetlands, 6, 3-78, 5-6, 5-32, 5-70, 5-106, 5-4
 EPA, 3-79
 Indirect Impacts, 5-33
 Mitigation, 5-34
 U.S. Army Corps of Engineers, 3-79
 Wild and Scenic Rivers, 3-90, 5-3, 5-42, 5-109

Z

Zoning, 3-1, 3-6
 City Use Districts and Definitions, 3-11
 Land Use Classifications, 3-8